“PRODUCE MORE TO LIVE BETTER”: COTTON, CORN, AND AGRARIAN MODERNIZATION IN GUATEMALA, 1944-1966

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By Patrick Chassé

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Abstract

This dissertation argues that the Guatemalan Revolution (1944-1954) was a transformational moment that hastened the adoption of modern, industrial agriculture throughout the country and facilitated the opening of new agrarian frontiers like the Pacific Coast. Between 1944 and 1954, technicians and bureaucrats adopted a new language for speaking about Guatemala's economic problems that emphasized the links between dependency on coffee, rural poverty, and the threat of deforestation and soil erosion. Experts created rural development initiatives that were supposed to remake Guatemala into a more efficient agricultural producer. These efforts were challenged by landowners, labourers and campesinos who tried to define policy that best served their interests. While large landowners initially rebuffed modernization schemes, campesinos quickly adopted new agricultural technologies and pushed the state to experiment with financial and land reforms that were necessary for small farms to prosper. One of the important conclusions of this dissertation is that supposedly traditional campesinos were responsible for the success of agrarian modernization in Guatemala. The dissertation also explores the long-term social and environmental consequences of the 1952 agrarian reform. Historians have often depicted the agrarian reform as an isolated political event that created impressive, but short-lived improvements in the lives of campesinos. Using case studies from the Pacific Coast, the dissertation demonstrates that land use changed dramatically between 1952 and 1954. Thousands of campesinos obtained new land that they rapidly cleared and developed. At the same time, large landowners raced to deforest and colonize new land with annuals like cotton so that they could limit their exposure to expropriation. After the coup, Guatemalan elites rejected government efforts to redistribute land and restructure the economy. However, large landowners embraced the new productive technologies—fertilizers, pesticides, hybrid seeds and mechanization—introduced during the Revolution. On the Pacific Coast, large landowners replaced campesino farms with industrial crops including cotton, corn and sugar. This new agricultural model created wealth for a small elite but caused long-term environmental problems and impoverished Guatemala's indigenous population.

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Introduction

In Miguel Angel Asturias' experimental masterpiece *Hombres de Maíz*, there is a memorable encounter in the remote reaches of the Guatemalan highlands. As he travelled between villages, a postman named Nicho encountered an old man who told him to "feed-up" his sad-looking dog and eat him. This shocked the postman, who insisted that it was more civilized to eat maize. The old man reminded Nicho that "maize costs the sacrifice of the earth, which is also human. I'd like to see you carry a maize field on your back like the poor earth does." He urged Nicho to take notice of the signs of disarray and environmental ruin caused by planting maize for profit: "[B]are slopes where the water runs only over stones, plots without that vegetable covering made of the hair of dead men who were made of flesh and dead men who were made of wood; stubble fields so full of stones it withers your soul."[1] The old man warned that the earth's fertility could not be sustained without sacrifices. He challenged Nicho to consider if those sacrifices would be made willingly—in the form of worship and labour—or if the earth would exact vengeance on the sons and daughters of corn merchants by forcing them to die and die hungry.[2]

The old man's language was grizzly, but he captured the essence of a very real problem facing Guatemala in the 1940s. Over several centuries Guatemalan ladinos—those of Spanish or European descent—had monopolized the country's best land and progressively displaced the much larger indigenous population into the highlands and other areas with more marginal soils.[3]

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[1] For further discussion of Asturias' work and politics see Chapter 2. Miguel Angel Asturias and Gerald Martin, *Men of Maize*, (London: Verso, 1988), 203, 205

[2] For non-western interpretations of the human connection with the natural world cemented by labor see Elizabeth A. Povinelli, "Do Rocks Listen? The Cultural Politics of Apprehending Australian Aboriginal Labor," *American Anthropologist* 97, no. 3 (1995): 505-18. For Mayan context see Nancy Marguerite Farris, *Maya Society Under Colonial Rule: The Collective Enterprise of Survival*, (Princeton, N.J.: Princeton University Press, 1992). For a broader Latin American analysis of indigenous ways of knowing the natural world and the connection with Western thought see Marisol de la Cadena, *Earth Beings: Ecologies of Practice Across Andean Worlds*, (Durham: Duke University Press, 2015).

[3] In Guatemala, Ladino colloquially indicates those of Spanish or European descent who have power over the larger indigenous community. This definition conflates power and ethnicity and prevents discussion about heterogeneity within ladino communities. As Charles Hale has noted, ladinos often have indigenous ancestry and some have recently tried to define alternate positions that are not part of the ladino-indian binary. Charles R. Hale, *Más Que Un Indio: Racial Ambivalence and Neoliberal Multiculturalism in Guatemala* (Santa Fe: School of the Americas Research Press, 2006), 3. For more about the connections between ladino and indigenous identities see Jeffrey L. Gould, *To Die in This Way: Nicaragua and the Myth of Mestizaje*, *1880-1965*, (Durham and London: Duke University Press, 1998), 10-13, 136. For an Andean perspective on the importance of power as part of the idea of ladino and mestizo see Mary Weismantel, *Cholas and Pishtacos: Stories of Race and Sex in the Andes* (Chicago: University of Chicago Press, 2001), xxxii.

This process accelerated in the 19th century as coffee production expanded along the Pacific Slope and in the northern region of Alta Verapaz. Most *campesinos* had access to small plots of land in the highlands, but these were often insufficient to support growing families and many supplemented their harvests with waged labour on coffee plantations.[4] Although indigenous campesinos coaxed good yields from their land by interplanting and careful fertilization, because they had limited access to fertile land they had to shorten fallows to keep up with sustained population growth throughout the 20th century.[5] Over time, this led to a progressive reduction in forest cover, increased soil erosion and static or slowly falling yields throughout the highlands. This agricultural system generated great wealth for large landowners but it was precarious: unexpected droughts or tropical storms could—and did—cause crop failures and food shortages that threatened to destabilize the country. The Revolutionary government that came to power in 1944 after decades of dictatorship tried to solve the crippling social and environmental problems facing Guatemala by modernizing agriculture.

The Guatemalan Revolution (1944-1954) was a transformational moment that hastened the adoption of modern, industrial agriculture throughout the country and facilitated the opening of new agrarian frontiers like the Pacific Coast. Between 1944 and 1954, technicians and bureaucrats adopted a new language for speaking about Guatemala's economic problems that emphasized the links between dependency on coffee, rural poverty and the threat of deforestation and soil erosion. The government's agricultural policy during this period was driven by experts

[4] Campesino refers to people who were relatively poor, lived in the countryside and usually had access to land, rented, owned or communally managed. They produced primarily for their household but also engaged in the market as producers and laborers. Campesino farms used family labor as the main means of agricultural production and were only lightly capitalized. Investments in hand tools—machetes, digging sticks and *azadones*—represented the main recurrent expense. There was a tendency toward intercropping, which diversified production and enabled campesinos to survive crop losses. The local community also played an important role in production, with family and community members informally sharing resources and labor. William Loker, "'Campesinos' and the Crisis of Modernization in Latin America," *Journal of Political Ecology* vol. 3 (1996): 71-73. For the flexibility of campesino as a political category for rural organizing see Ingrid Yulisa Castañeda, "Dismantling the Enclave: Land, Labor, and National Belonging on Guatemala's Caribbean Coast, 1904-1954," PhD Dissertation. (Yale University, 2014), 118. For a modern discussion of the historical definition of a campesino identity and its limits see Christopher Boyer, *Becoming Campesinos: Politics, Identity, and Agrarian Struggle in Postrevolutionary Michoacán, 1920-1935* (Stanford, California: Stanford University Press, 2003), 2-3, 44-45.

[5] During the Revolution, most of the rural population was indigenous and, therefore, most campesinos were indigenous. However, the correlation between campesino and indigenous identity often varied according to the region. In the southeast especially, there was a higher prevalence of campesinos who also self-identified as ladino. In Guatemala, the ladino identity is largely oppositional: to be ladino means to reject an indigenous identity and claim Spanish heritage. Thus there an important political dimension to the indigenous-ladino identity discussion. Most of the sources used in the dissertation do not identify class and ethnicity at the same time. Instead, small rural farmers are usually described as campesinos or indigenous. Only in rare instances were they called ladino.

who believed in the transformative power of state-led development and embraced agrarian modernization as the solution to endemic production problems. They were adherents of an ideological view that James Scott has called "high modernism," which was characterized by a fervent belief in the power of science and planning to make nature productive and foster social order.[6] Throughout the Revolution, agrarian modernizers—agronomists, policymakers and farmers—tried to understand the problems facing Guatemala by drawing on an international discourse of conservation and rural development. Experts emphasized the connections between scientific management of the environment, agricultural productivity and the economic well-being of the nation.

In the early years of the Revolution, advocates of agrarian modernization identified two barriers to Guatemala's progress: the state's dependency on coffee exports and the ubiquity of traditional maize cultivation. Agronomists and policymakers devised plans for rural development that promoted regional crop specialization supported by fertilizers, hybridized seeds, and tractors.[7] They tried to create a new Guatemalan economy that balanced domestic production with exports. Policymakers encouraged large landowners to diversify their plantations with new exports like cotton and high-yielding corn varieties, but the state lacked the power to compel elites to diversify.[8] Modernizers quickly refocused their development efforts on campesinos, whom they wanted to transform into small, market-oriented farmers. Experts argued that traditional corn production caused deforestation and soil erosion and they encouraged campesinos to adopt more marketable and environmentally appropriate crops like cotton and henequen. By emphasizing the destructiveness of corn, modernizers misunderstood the basic nature of the problem. It was a shortage of land and capital that prevented indigenous campesinos from diversifying their fields, not a lack of interest in new farming practices and crops. Campesinos often surprised agricultural extension agents by enthusiastically engaging in

[6] James Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998), 5; J.T. Way, *The Mayan in the Mall: Globalization, Development, and the Making of Modern Guatemala* (Durham: Duke University Press, 2012), 5, 42, 88.

[7] They also borrowed aspects of "revolutionary forestry" from Mexico. Christopher R. Boyer, *Political Landscapes: Conservation, Forests and Community in Mexico* (Durham: Duke University Press, 2015), 12; Joseph Cotter, *Troubled Harvest: Agronomy and Revolution in Mexico, 1880-2002* (Westport, Conn: Praeger, 2003); Deborah Kay Fitzgerald, *Every Farm a Factory: The Industrial Ideal in American Agriculture* (New Haven: Yale University Press, 2003), 5-7.

[8] Large landowners includes Guatemalans and foreign owners who operated large plantations. These farms were focused on export production and reliant on a paid workforce. There are of course exceptions to the general characterization, as some large plantations produced corn and sugar for domestic consumption.

modernization initiatives. This enthusiasm challenged elite and middle class ideas about race and class in Guatemala, but the possibilities for rural development were fundamentally constrained by the unequal distribution of land and capital.

By 1950, roughly 72% of Guatemala's most fertile land was controlled by just 2% of the country's farms. This left 88% of the population to subsist on 14% of the country's farmland: over half of Guatemalan farms controlled less than 2 manzanas.[9] Leading modernizers, including the new President Jacobo Arbenz, believed that a substantive land reform was necessary to put underutilized land into production and guarantee rapid increases in rural production. The Agrarian Reform Law (Decree 900) passed in 1952 was the culmination of nearly a decade of rural experimentation, extension work, and legal reforms. Between 1952 and 1954, the state redistributed fertile land to thousands of campesinos and offered beneficiaries hybridized corn and cotton seeds. The government hoped that democratizing land tenure would quickly diversify crop production, helping Guatemala overcome perennial food production problems and strengthening the economy. The Arbenz administration was again unprepared for the enthusiasm of Guatemalan campesinos, who pushed for a more aggressive land reform and demanded the fertilizers, seeds and tractors promised by the state.[10] Working together in the countryside with campesinos forced technicians especially to rethink their preconceptions about indigenous and campesino productivity.

The 1952 Agrarian Reform Law unleashed powerful social and environmental changes across Guatemala that President Jacobo Arbenz and his advisors struggled to manage. Large landowners vehemently opposed reform efforts and used a variety of legal strategies to delay or prevent expropriation. They rapidly cleared underutilized land and planted it with crops like cotton, which was heavily promoted by the state and grew quickly. The agrarian reform engendered widespread opposition from Guatemalan elites, who resented the expropriation of land and feared the rising power of campesinos and the perceived advance of communism in Guatemala. A U.S. backed coup in 1954 prematurely ended the agrarian reform and created the

[9] Conversions for common measurements are as follows. The smallest properties were measured in cuerdas, where 1 cuerda =0.3 acres. Medium properties were in manzanas, where 1 manzana = 1.73 acres = 0.70 hectares. Larger properties are measured in caballerias, where 1 caballeria = 64 manzanas = 110 acres = 45 hectares. Jim Handy, *Revolution in the Countryside: Rural Conflict and Agrarian Reform in Guatemala, 1944-1954* (Chapel Hill: University of North Carolina Press, 1994), 82.

[10] Cindy Forster, *The Time of Freedom: Campesino Workers in Guatemala's October Revolution* (Pittsburgh: Pittsburgh Press, 2001), 196.

socio-economic conditions that enabled large landowners to consolidate their control over the nation's most fertile land on Guatemala's Pacific Coast.[11] After the coup, almost all the land distributed through the 1952 Agrarian Reform Law was returned to landowners who alleged that beneficiaries wasted productive land by planting corn. This claim dismissed campesino efforts to obtain new seeds and fertilizers and the coup itself prevented most agrarian reform beneficiaries from moving beyond the initial phase of land colonization.

Large landowners, paradoxically, benefitted tremendously from the free labour Decree 900 beneficiaries had invested in clearing new land. They utilized technical and financial reforms introduced during the Revolutionary-era to open new land and plant new export crops, including cotton. The displacement of land reform beneficiaries destabilized domestic corn supplies and the decade after 1954 was characterized by corn shortages, inflation and speculation that adversely affected the food security of the rural poor. Without the active support of the state, campesinos were unable to afford the costs associated with modern agriculture and the benefits of agrarian modernization were limited to well-capitalized plantations.[12] Guatemala's poorest once again had to supplement their small plots with seasonal migrations to the Pacific Coast, where they laboured under the hot sun harvesting cotton, sugar, bananas and more. Cotton workers especially suffered from malnutrition and pesticide poisoning even as Guatemala's landowning elite enjoyed an economic bonanza. Bereft of an agenda for social change and a conservation ethos, the commodification of corn and cotton that began during the Revolution facilitated the rapid deforestation of the Pacific Coast and the impoverishment of Guatemalan campesinos that manifested as chronic malnutrition.

Throughout the Revolution, Guatemalan policymakers and agronomists preached the gospel of modernization in newspapers, trade journals and public demonstrations. However, they also were citizens and historical actors situated in a tumultuous and transformative historical moment when many Guatemalans were experimenting with new political freedoms after an era of dictatorship. Expert-led initiatives to remake rural Guatemala were challenged by landowners, labourers and campesinos who tried to define policy that best served their interests. One of the

[11] This term is used to refer to the major agricultural departments facing the Pacific, especially Escuintla, Suchitepéquez, Retalhuleu and Santa Rosa. Jutiapa and San Marcos are less prominently featured, partly because there was far less coastal land in these departments relative to their neighbours. The San Marcos region was also well examined by Cindy Forster.

[12] David Carey, "Guatemala's Green Revolution: Synthetic Fertilizer, Public Health, and Economic Autonomy in the Mayan Highland," *Agricultural History* 83, no. 3 (2009): 283-322.

important conclusions of this dissertation is that supposedly traditional campesinos were responsible for the success of agrarian modernization in Guatemala. While large landowners initially rebuffed modernization schemes, campesinos quickly adopted new agricultural technologies and pushed the state to experiment with financial and land reforms that were necessary for small farms to prosper.

I also emphasize the long-term social and environmental consequences of the 1952 agrarian reform. Historians have often depicted the agrarian reform as an isolated political event that created impressive, but short-lived improvements in the lives of campesinos. The violent reversal of the agrarian reform after the 1954 coup is often used to conclude the story of the Revolution. It demonstrates the failure of an ambitious effort to "legislat[e] a new social order" and presages Guatemala's slide into repression and civil war.[13] Using case studies on the Pacific Coast, I demonstrate how land use changed dramatically between 1952 and 1954. Thousands of campesinos obtained new land that they rapidly cleared and developed. At the same time, large landowners raced to deforest and colonize new land with annuals like cotton so that they could limit their exposure to expropriation. After the coup, Guatemalan elites rejected government efforts to redistribute land and restructure the economy. However, large landowners embraced the new productive technologies—fertilizers, pesticides, hybrid seeds and mechanization—introduced during the Revolution. On the Pacific Coast especially, large landowners replaced campesino farms with industrial crops including cotton, corn and sugar. The threat of state and landowner violence effectively suppressed campesinos activism and allowed large landowners to assert unprecedented control over land and labour. The Revolution and its abrupt reversal enabled large landowners to rapidly transform the Pacific Coast into Guatemala's newest—and most important—agro-export zone. This demonstrates the unexpected durability of the Revolution and subverts the conventional narrative that emphasizes the coup as a moment of rupture.[14]

[13] Cindy Forster, *The Time of Freedom,* 2. For other examples of this narrative arc see Jim Handy, *Revolution in the Countryside*; Greg Grandin, *The Blood of Guatemala: A History of Race and Nation* (Durham, NC: Duke University Press, 2000).

[14] For a synthesis of this narrative see Timothy J. Smith and Abigail E. Adams. *After the Coup: An Ethnographic Reframing of Guatemala, 1954,* (Urbana: University of Illinois Press, 2011), 3.

Sources

The dissertation uses a mix of government records, newspapers, specialist periodicals and files from the U.S. Department of Agriculture and the Department of State. There are also files drawn from the United Nations Food and Agriculture Organization in Rome. I use archival records from the Ministry of Agriculture and its dependencies, which cover the period between 1930 and 1956. These files offer unprecedented insight into the activities of government agents, especially during the Arévalo and Arbenz administration. This allowed me to reconstruct attempts to impose agrarian modernization initiatives on the countryside and analyze the reaction of large landowners and campesinos. These records are located in Guatemala's Archivo General de Centro America, but they have been overlooked by most historians examining the Revolution. A notable exception is Stephen Kent O'Brien's examination of environmental change in Escuintla. O'Brien, however, only drew on a small selection of files and used this information, in conjunction with US documents, to argue that the Guatemalan state was wooed by the productivity of US agriculture and United Fruit Company plantations.[15] His bias reflects both a historiographical tradition that has focused on the U.S. role in Guatemala during the Revolution and his use of files that feature the Instituto Agropecuario Nacional (IAN).[16] IAN quickly lost power and influence among progressives because of its links to the United States and conservative landowners.[17] In 1948 it was supplanted by the Institute for Encouraging Production (INFOP), a semi-autonomous development organization that was created to rapidly modernize Guatemalan.

This dissertation examines the agrarian modernization ideas that developed within Guatemala, which borrowed from international discourses but were profoundly shaped by Guatemalan history and politics. I examined INFOP's records for insight into rural development

[15] He argues that the Guatemalan government "enthusiastically adopted techniques and ideas from the U.S., a country considered racially superior." Stephen Kent O'Brien, *On Perilous Ground: A Social and Environmental History of Escuintla on Guatemala's South Coast, 1928-1962* (Phd Dissertation, Yale University, 2007), 162, 183.
[16] Stephen Schlesinger and Stephen Kinzer, *Bitter Fruit: The Story of the American Coup in Guatemala* (Cambridge, Massachusets: Harvard University, David Rockefeller Center for Latin American Studies, 2005); Pierro Gleijeses, *Shattered Hope: The Guatemalan Revolution and the United States, 1944-1954* (Princeton: Princeton University Press, 1992); Richard H. Immerman, *The CIA in Guatemala: The Foreign Policy Intervention* (Austin: University of Texas Press, 1982); Ronald M. Schneider, *Communism in Guatemala, 1944-1954* (New York: Octagon Books, 1979, 1958); O'Brien, *On Perilous Ground*, 171.
[17] IAN worked with the USDA on rubber cultivation in the 1940s and with the Rockefeller Foundation on wheat hybridization at the same time experiments were ongoing in Mexico. INFOP and IAN scientists had competing research stations that used very different approaches to hybridization. Manuel Elgueta, Report to Instituto de Fomento de la Producción. June 14 1949. p5. Min. Ag. Leg 421. AGCA. Guatemala.

and agarian modernization initiatives that were heavily influenced by the political priorities of the Revolution. Established in 1948, the semi-autonomous agency integrated many of the modernization initiatives introduced during the Arévalo administration including extension work, crop experimentation and farm financing. INFOP left no distinctive archive, however, the traces of its activities are found throughout the Ministry of Agriculture files. I have also drawn on their journal the *Monitor del INFOP*, which was published between 1949 and 1954. This rich source includes editorials about development issues, expositions on INFOP's work, and agricultural advice from Guatemalan and international experts.

The Ministry of Agriculture files and INFOP records tend to privilege the activities of modernizers, without critically examining the drawbacks of state-led agricultural development. The activities of the Ministry of Agriculture and INFOP were contextualized by drawing on newspapers and periodicals including the main daily, *El Imparcial*, the communist newspaper *Octubre* and the Ministry's publication *Revista Agrícola*. I have included perspectives from campesinos, labourers and large landowners that challenged agrarian modernization initiatives deployed by the state. The dissertation also includes newly available papers from President Jacobo Arbenz's plantation El Cajón. These highlight tensions between agrarian modernization as an ideal and the unexpected problems that arose when it was applied in the countryside. The conservation and rural development policies that were deployed in Guatemala during and after the Revolution cannot be understood without reference to local power struggles, class, and race dynamics. These tensions were evident on Arbenz's plantation.

Finally, I examine the legal files created during the application of the Agrarian Reform Law, also known as Decree 900. These files have previously been used to explore the political significance of the agrarian reform in the countryside, especially for labourers and campesinos.[18] However, the records also offer rich information about the land use: agronomists were routinely sent out to examine land prior to its expropriation and a similar process was repeated after the reversal of Decree 900 in the summer of 1954. Using these sources, I was able to document the intensification of agriculture throughout the Pacific Coast. There are limitations to these legal documents that are especially evident after the coup. They offer a fragmented vision of the countryside that focuses on a single plantation and it is often difficult to reconstruct the historical relationship of the farm to the surrounding region. Moreover, agronomists who surveyed the

[18] Cindy Forster, *The Time of Freedom*; Jim Handy, *Revolution in the Countryside.*

plantations after 1954 did not make fair assessments about how campesinos used the land they were given. Their reports were a pretext for the return of land to Guatemalan elites who promised the state that they would intensify production and modernize their plantations. Nevertheless, these documents offer important clues about the environmental consequences of this rapid transition between two very different agroecosystems.[19]

Geography and Environment

Guatemala is defined by its climatic, biological, and ethnic diversity. Though the country is small—approximately the same size as Newfoundland or Tennessee—it contains fourteen ecoregions. Within these broad climatic regions there are 66 unique ecosystems. Guatemala's mountainous topography and its position between North and South American created the ideal conditions for the evolution of many distinctive species.[20] This biological diversity is mirrored in Guatemalan culture and politics. In addition to Spanish, there are 23 officially recognized indigenous languages. Most of these are Mayan, but there are also unique languages including Xinca and Garifuna. Although there is significant diversity within Guatemala, for much of the 20th century official statistics have emphasized the divide between indigenous and ladino populations. The 1950 census reported that out of 2,790,868 residents—an approximation because residents could not be reliably counted—53.6% of the population was indigenous. The ratio of indigenous to ladino varied widely between regions: the heaviest concentration of indigenous Guatemalans were in the Highlands and ladinos dominated the Oriente. The countryside is also divided into twenty-two departments that govern over 331 municipalities (Figure 1). The most important socio-ecological zones in Guatemala are the Highlands, the Pacific Coast, the Northern Lowlands, the Petén and Caribbean Lowlands.[21]

[19] An agroecosystem is the human organization of nature to benefit domesticated plants and animals that feed, or otherwise benefit, people. Economic factors often shape the agroecosystem, but all farms have natural limits: photosynthesis, soil quality, and non-human organisms. Humans can push these natural boundaries, but there are consequences for going past natural limits. As Donald Worster notes, "It is a rearrangement, not a repeal, of natural processes." Donald Worster, "Transformations of the Earth: Toward an Agroecological Perspective in History," *The Journal of American History* vol. 76, no. 4 (1990): 1093-1094.

[20] USAID, "Guatemala Biodiversity and Tropical Forest Assessment," (2002), 4. Accessed July 9, 2017. http://pdf.usaid.gov/pdf_docs/Pnadf213.pdf

[21] This section draws on Carol Smith, "Social Relations in Guatemala Over Time and Place," in *Guatemalan Indians and the State: 1540 to 1988*, ed. Carol A. Smith (Austin: University of Texas Press, 1990), 6-7; Edward C. Higbee, "The Agricultural Regions of Guatemala," *Geographical Review*, Vol. 37. No 2 (1947): 177-201; Felix McBryde, *Cultural and Historical Geography of Southwest Guatemala* (Washington: U.S. Government Printing Office, 1947).

Guatemala's defining geographic features are the mountain chains that run through the middle of the country. These major peaks influence weather patterns and defined agricultural possibilities for most of the country. The Sierra de los Cuchumatanes dominates the northern edge of the Highlands and this transitions eastward into the Chacus, Chama, and Santa Cruz Sierras. As this series of mountains subsides, they give way to the Northern Lowlands. The Sierra de las Minas defines the eastern edge of the Highlands, framing the Motagua and Polochic rivers that flow to the Pacific Ocean. The Sierra Madre stretches down from Mexico through to El Salvador, bordering the Pacific facing section of the Highlands. There are 33 active volcanoes in this mountain chain and their frequent eruptions have deposited rich soil across the Pacific Slope that has drifted toward the coast over thousands of years.

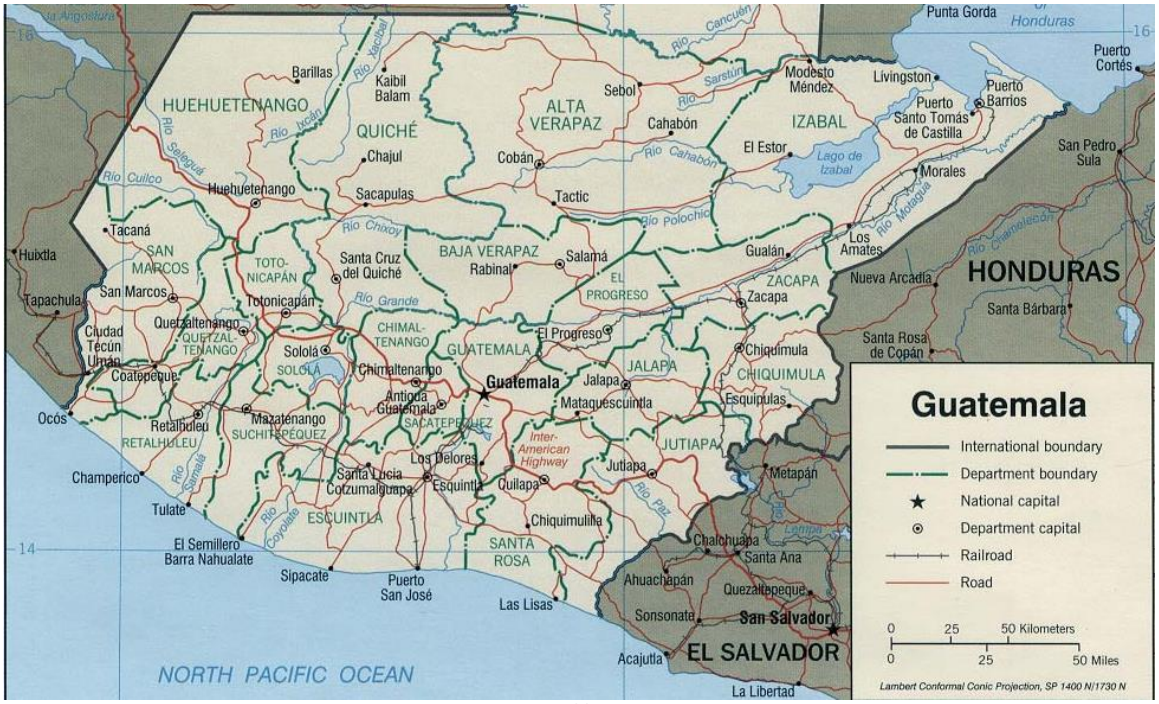

Figure 1: Political map of Guatemala (2000)[22]

The Highland region is divided between the Occidente—the heavily indigenous Central Highland region—and the Oriente—a more arid landscape found in the Southeastern mountains and plains. The Central Highlands is between 1500 and 3000 metres above sea level, with higher peaks concentrated in the Sierra los Cuchumatanes. This rugged topography has made travel and

[22] Map in the public domain, access provided by University of Texas Library. "Guatemala (Political), 2000." U.S. Central Intelligence Agency. Perry-Castañeda Library Map Collection. Accessed April 20, 2017. http://www.lib.utexas.edu/maps/guatemala.html

trade difficult, but it has also created a wide variety of micro-climates within close proximity. Though much of the Highlands is known as "tierra fria" because of the spring-like weather that lasts through most of the year, high peaks often give way to small mountain valleys. This has enabled communities to grow a wide variety of produce in a compact area, including corn, wheat, potatoes and a wide variety of fruit. There is an abundance of water throughout the Central Highlands, because the rough terrain is cut through with fast moving streams fed by mountain run off and natural springs. There is a four to five month dry season that begins in late November, but mountains mists and dew allow campesinos to begin planting milpa before the rainy season returns in earnest in late May. There are several major valleys in the Highlands that have become agricultural hotspots, including an interconnected series of valleys between Totonicapán and Quetzaltenango and the Chimaltenango-Tecpán-Patzún triangle.[23]

The transition between the Central Highlands and the Southeast begins around Guatemala City. This area is between 1500 and 500 metres above sea level and includes land in El Progreso, Jutiapa, Jalapa, Zacapa and parts of Santa Rosa, Quiché, and Baja Verapaz. The Southeast includes some of the driest and warmest regions in Guatemala: less than half a meter of rain falls annually in El Progreso. Historically, most communities formed beside major watersheds and crop production was limited by the accessibility of water.[24] During the Revolution, farmers grew corn, cotton, tomatoes, chiles, tobacco and other tropical fruits that did well in the hot climate. Cattle ranching was also common.[25] The arid interior departments of El Progreso and Zacapa were mostly ladino but this trend did not hold for Jalapa, where more than 50% of the population was indigenous.[26]

The Pacific Coast includes three regions: the Upper Pacific Piedmont, the Lower Pacific Piedmont, and the Coastal Plain. The Upper Piedmont is a band of land between 500 and 1,500 metres above sea level that follows the edge of the mountains that run from Mexico to El Salvador. The landscape is often rugged but the nearby volcanoes deposited a rich layer of volcanic soil that is extremely fertile, although prone to erosion and leeching. The region receives between three and four metres of rainfall per year, but this decreases south of Escuintla. This was historically one of the most important coffee producing regions, although throughout

[23] Higbee, 181.
[24] Simmons et. al., *Clasificación de los Suelos de Guatemala*, 83.
[25] Higbee, 188-189.
[26] *VI Censo de Población*, Vol. 2 (Guatemala, 1950), xxxii, xlvi.

the 20th century planters experimented with other tree crops including cinchona. Below this is the Lower Pacific Piedmont, between 100 and 500 metres above sea level. This area also has rich, fertile volcanic soils, which have been deposited by eruptions and washed down from the mountains. There is ample water in this region, with heavy rainfall during the wet season and year round water available from the many rivers that flow from the Highlands. The vegetation in this area is largely tropical moist forest.[27] This area was historically dominated by cattle ranches, some bananas and scattered sugar plantations. The character of this region changed rapidly during the Revolution, when it was identified as an important, accessible and underutilized agricultural frontier that was well suited to mechanization. In 1947, geographer Edward Higbee argued that mechanization, agricultural research and public health initiatives to control malaria could transform this promising tropical frontier into "the garden spot of Central America."[28]

Finally, the Pacific Coastal Plain was a 15 to 40 kilometer wide band of land between the ocean and 100 metres above sea level. The highest part of this region shared most of the same attributes as the Pacific Piedmont, but rainfall became scarce as the land approached the ocean. Unlike the Upper and Lower Pacific Piedmont, this region was still heavily forested in the 1940s, with brushlands, natural pastures and swamps breaking up the landscape. Most of this forested area was tropical dry forest, although limited rainfall in some areas favoured very dry forest vegetation and areas near the coast were occupied by mangroves.[29] The major economic enterprise on the Pacific Coastal Plain was the United Fruit Company plantation in Tiquisate, which had constructed irrigation for reliable production. Most large landowners grazed cattle throughout the region. Outside of the United Fruit Company plantations, endemic malaria-risk kept population low relative to productivity of the land.[30] In general, the population

[27] This is a generalization because topographical changes heavily influence the vegetation in a specific area. Lesley Holdridge, "Mapa de la Republica de Guatemala: Vegetación," *Los Bosques de Guatemala* (INFOP: Guatemala, 1950), 10.

[28] McBryde, 5-6; Higbee, 194, 200; Simmons, et. al., *Clasificación de los Suelos de Guatemala,* 311-312, 278-279.

[29] Holdridge, *Los Bosques de Guatemala*, 12-13. The tropical dry forest has been cleared across Central America and Mexico as industrial agriculture has expanded. For more on this forest type, its range and threats to its see Daniel Janzen, "Tropical Dry Forests: The Most Endangered Tropical Ecosystem," in *Biodiversity*, ed. E. O. Wilson (Washington, DC: National Academy Press, 1988); Daniel Janzen, *Guanacaste National Park: Tropical, Ecological, and Cultural Restoration* (San José: Editorial UNED, 1986); Robert H. Roubichoux and David Yetman, eds., *The Tropical Dry Forest of Alamo: Biodiversity of a Threatened Ecosystem in Mexico* (Tucson: University of Arizona Press, 2000); Paul S. Martin, et al., eds., *Gentry's Rio Mayo Plants: The Tropical Deciduous Forest and Environs of Northwest Mexico* (Tucson: University of Arizona Press, 1998).

[30] McBryde described "heavy gallery forests" that bordered streams and rivers throughout the coast. Park-savanna dominated the area between rivers, likely sustained by cattle ranching and inconsistent rainfall. This was a

concentration was highest in the Upper Pacific Piedmont and dropped off close to the coast. The composition of the population varied widely throughout the Pacific Coast. The indigenous population was below 25% in the southerly departments of Jutiapa, Santa Rosa, and Escuintla. However, the indigenous population was much higher in Suchitepéquez, Retalhuleu, and San Marcos.[31] These departments had close kinship and political connections to powerful highland communities like Quetzaltenango.

The final regions are the Northern Lowlands, the Caribbean Lowlands and the Petén. At the beginning of the Revolution, the Guatemalan government was eager to develop the agricultural capacity of these regions but environmental and political factors encouraged them to refocus on the Oriente and the Pacific Coast. The Northern Lowlands is on the northern edge of the Central Highlands and includes land between 500 and 1500 metres above sea level. This climate in this region is like the Upper Pacific Piedmont, but the region does not have the accumulation of volcanic soils that make the Pacific Coast so fertile. The soil quality is thus significantly worse and export crops like coffee produce inferior yields compared to the Pacific Coast. The German plantation owners who dominated this region in the 19th and 20th century were able to compete because they had better access to ports and used cheap labour to compensate for the marginal soils.[32]

The Caribbean Lowlands includes the Caribbean strip near Lake Izabál and the Franja Transversal del Norte, a band of land running through northern parts of Izabál, Alta Verapaz, Quiché and Huehuetenango. The most fertile parts of the Caribbean Lowlands were the major river valleys, including the Polochic, Sarstún and the Motagua. In the first decade of the 20th century, the Guatemalan government made major land concessions to the United Fruit Company including large parts of the Motagua Valley that the company transformed into industrial plantations that produced bananas and abaca.[33] There were also important railway lines that ran through these river valleys, connecting Guatemala City and Alta Verapaz to the Caribbean Coast. Most of the Caribbean Lowlands and the Petén were lightly populated and campesinos practiced

generalized observation, since McBryde only descended to the coast in Suchitepéquez. McBryde, 4-5, Map 7, Map 4; Higbee, 201.

[31] *Sexto Censo de Población*, xxxii.

[32] Higbee, 190-191; Simmons et. al., *Clasificación de los Suelos de Guatemala*,

[33] Paul Dosal, *Doing Business with the Dictators*, 46-47, 62, 78. Paul Dosal, *Power in Transition: The Rise of Guatemala's Industrial Oligarchy, 1871-1994*, (Westport, Connecticut: Praeger, 1995), 42-43.

swidden agriculture, which was well suited to the limits of soil.[34] Much of the soil in the Petén is acidic, and even where soils are moderately fertile, poor drainage, thin and rocky topsoil and access to water is a common issue.[35] This was not evident to the Arévalo administration who—impressed by the fecundity of the tropical vegetation in the Petén—tried to establish an agricultural colony in the 1940s. The Poptún colony was an expensive failure and the government's attention turned to other promising agricultural regions including the upper Motagua Valley and the Pacific Coast.[36]

Creating Commodities

There are still very few environmental histories about Guatemala. Those that exist focus on the rise of coffee production in the 19th century or the expansion of industrial agriculture after the 1970s.[37] As a result, there is an important gap in the historiography between the 1930s and the 1960s. This was a formative moment in Guatemalan agriculture when modernizers introduced many of the most important technologies and techniques of the nascent Green Revolution. During this period, large landowners and campesinos adopted hybridized seeds, mechanization, fertilizers, and pesticides. David Carey argues that the popularization of green revolution technologies throughout the Guatemalan Highlands occurred during the late 1950s and 1960s, which was due in part to heavy promotion by USAID technicians.[38] This dissertation

[34] For a contemporary discussion of this system see Laura Hurtado Paz y Paz, *Dinámicas Agrarias y Reproducción Campesino en la Globalización: El Caso de Alta Verapaz, 1970-2007* (Guatemala, C.A.: F&G Editores, 2008), 22-23.

[35] Simmons et. al., *Classificación de los Suelos de Guatemala*, 587; Higbee, 177-180;

[36] The Petén and especially the Transveral became more important for cattle and exports like sugar and oil palm in the 1960s onward. Liza Grandia, *Enclosed: Conservation, Cattle, and Commerce Among the Q'eqchi' Maya Lowlanders* (Seattle: University of Washington Press, 2012).

[37] For works on coffee Stefania Gallini. *Una Historia Ambiental del Café en Guatemala: la Costa Cuca entre 1830 y 1902* (Ciudad de Guatemala: Asociación para el Avance de las Ciencias Sociales en Guatemala, 2009); Christian Berth, "Between 'Wild Tropics' and 'Civilization': Guatemalan Coffee Plantations as seen by German Immigrants," in *Comparing Apples, Oranges, and Cotton: Environmental Histories of the Global Plantation*, Frank Uekötter, ed. (Frankfurt and New York: Campus Verlag, 2014). For work on the industrial agriculture, including cattle ranching see Liza Grandia, *Enclosed: Conservation, Cattle, and Commerce Among the Q'eqchi' Maya Lowlanders* (Seattle: University of Washington Press, 2012); Stephen Kent O'Brien, *On Perilous Ground: A Social and Environmental History of Escuintla on Guatemala's South Coast, 1928-1962* (Phd Dissertation, Yale University, 2007); Daniel Faber, *Environment Under Fire: Imperialism and the Ecological Crisis in Central America* (New York: Monthly Review Press, 1993); For extractive industries see Luis Solano, *Guatemala: Petróleo y Minería en las Entrañas del Poder*. (Guatemala: Inforpress Centroamericana, 2005); Luis Solano, "Development and/as Dispossession: Elite Networks and Extractive Industry in the Franja Transversal del Norte," in *War By Other Means: Aftermath in Post-Genocide Guatemala*. eds., Diane Nelson and Carlota (Durham: Duke University, 2013), 119-142. For an overview of the environmentalism and the state, especially in the Petén see Susan Berger, "Environmentalism in Guatemala: When Fish Have Ears," *Latin American Research* Review, Vol 32. No. 2 (1997): 99-116

[38] Although the consequences of industrial agriculture have been in explored in the literature on cotton production, scholars still know relatively little about how campesinos interacted with green revolution technologies. Carey

demonstrates that the Revolution was a key moment in Guatemala's agrarian modernization that established the basic infrastructure of the Green Revolution. This contextualizes the rapid spread of the new seeds and chemicals described by Carey.

During the Revolution, the government promoted modern agricultural technologies that enabled the spread of new commodities like hybridized corn and cotton. Cotton and corn have little in common at first glance. One is used for clothing and textiles, the other a staple food for Guatemalans and their livestock. Yet these crops are bound together in a tale of hope, hunger, and dispossession that this dissertation traces throughout the 1940s and 1950s. During the Revolution, the government distributed cotton seeds to large and small farmers and tried to replace traditional maize with high yielding corn varieties that would be grown on coastal plantations. Agrarian modernizers believed that if corn was plentiful indigenous campesinos would abandon subsistence agriculture and become market farmers. This strategy betrayed the overconfidence of modernizers who—especially at the beginning of the Revolution—knew very little about the countryside they sought to transform.

For Mayan campesinos corn has immense spiritual and material value. Mayan communities revolve around corn production and consumption: no meal is considered complete without tortillas and campesinos always set aside some land for *milpa*.[39] The bewildering diversity of maize varieties in Guatemala is a testament to the resiliency of campesinos who survived crop failure, displacement and dispossession.[40] This social history is embodied in the seeds saved by communities and remembered during the planting of the maizefield. This is a moment of spiritual importance among the Maya because it is crucial for the social reproduction of the community and the family. [41] Although corn is sacred, Mayans have always sold and exchanged surplus corn for other goods they needed. The same holds true for cotton, a crop that

explores one dimension of this issue by examining indigenous perspectives on fertilizers see David Carey Jr., "Guatemala's Green Revolution: Synthetic Fertilizer, Public Health, and Economic Autonomy in the Mayan Highland," *Agricultural History* 83: no. 3 (2009): 295.

[39] Milpa is a combination of corn, beans and squash that are commonly interplanted. See Chapter 2 for further discussion.

[40] For seeds as agents of culture, especially during moments of diaspora or forced migration see Judith Carney and Richard Nicholas Rosomoff, *In the Shadow of Slavery: Africa's Botanical Legacy in the Atlantic World* (Berkeley: University of California Press, 2009), 76-77.

[41] John Watanabe, *Maya Saints and Souls in a Changing World* (Austin: University of Texas Press, 1992), 66-67, 131-137.

was domesticated in Central America and was commonly refined into clothing by Mayan communities.[42]

The Revolution marked a turning point in the Guatemalan relationship with corn and cotton. Modernizers established the economic and technological framework that tried to transform these crops into commonplace commodities defined primarily by their market value. This transformation helped to obscure the social and environmental inequalities that occurred during their production.[43] Following historian Ted Steinberg, I examine how the struggle to control natural resources that were turned into clothing, food and shelter "created and reproduced social inequalities."[44] The hybridization of corn excited modernizers who believed that traditional milpa cultivation was a barrier to rural development that caused deforestation and soil erosion. Like their Mexican contemporaries, Guatemalan reformers embraced a modern agriculture that promised increased productivity by means of mechanization, hybrid seeds, and fertilizers.[45] These technologies increased yields but the social, economic and environmental costs of productivity were often deferred into the future.[46] Experts did not seriously entertain the notion that indigenous farmers had knowledge and experience that might aid efforts to improve rural productivity. By emphasizing cultural barriers to development, modernizers misunderstood many of the environmental problems they observed and narrowed the field of possible solutions for deforestation and soil erosion. As Jim Handy argues, the uncertain embrace of Guatemala's

[42] The most common variety of cotton cultivated around the world today, *G. hirsutum*, was first domesticated in Central America Sven Beckert, *Empire of Cotton: A Global History* (New York: Alfred A. Knopf, 2015), xix, 3, 6; Jonathan F. Wendel, Curt L. Brubaker and A. Edward Percival, "Genetic Diversity in Gossypium Hirsutum and the Origin of Upland Cotton," *American Journal of Botany* 79, no. 11 (1992): 1291-310; C. Wayne Smith and J. Tom Cothren, eds., *Cotton: Origin, History, Technology and Production* (New York: John Wiley & Sons, 1999), 11.
[43] Drawing on Marx, David Harvey notes the commodity is an abstraction that "'coagulates' or 'congeals'" the labor required to produce it and resulted in a "*thing* that has value and the *thing* that had the objective qualities." David Harvey, *A Companion to Marx's Capital*, (London and New York: Verso, 2010), 34, 41.
[44] Ted Steinberg, "Down to Earth: Nature Agency and Power in History," *The American Historical* Review, Vol. 107, No. 3 (June 2002): 803.
[45] For an overview of the Green Revolution in Mexico see Nick Cullather, *The Hungry World: America's Cold War Battle Against Poverty in Asia* (Cambridge, Mass.: Harvard University Press, 2013), Chapter 1. For more detailed analysis see Joseph Cotter, *Troubled Harvest: Agronomy and Revolution in Mexico, 1880-2002* (Westport, Connecticut: Praeger, 2003). For a strong opposition to agrarian modernization and efforts to create an alternative model of agronomy see, Matthew Caire-Pérez, "A Different Shade of Green: Efraím Hernández, Chapingo, and Mexico's Green Revolution, 1950-1967," PhD diss, University of Oklahoma (2016).
[46] For Maya Kaqchikel reflections on the costs of modern agriculture, which they began to realize in the 1960s, see David Carey, *Our Elder Teach Us: Maya-Kaqchikel Historical Perspectives* (Tuscaloosa: University of Alabama Press, 2001), 106. Also David Carey Jr., "Guatemala's Green Revolution: Synthetic Fertilizer, Public Health, and Economic Autonomy in the Mayan Highland," *Agricultural History* 83: no. 3 (2009): 283-322. For the classic critique of the Green Revolution see Vandana Shiva, *The Violence of the Green Revolution: Third World Agriculture, Ecology, and Politics* (London: Zed Books, 1991).

indigenous population by educated progressives hampered the Revolution, slowing its spread through the countryside and weakening the Government's potential base of support.[47]

Many intellectuals who sympathized with the Maya harbored doubts about their ability to abandon traditional agriculture—and the focus on community it connoted—to embrace markets and the nation. The writer Miguel Angel Asturias struggled throughout his life to understand how predominantly indigenous countries like Guatemala could become modern.[48] His 1923 thesis *El Problem Social del Indio* (1923), argued for forced assimilation of Guatemala's indigenous population. Only by "transfus[ing] new blood into his veins" wrote Asturias, could Guatemala modernize Mayans and thereby secure the nation's economic prosperity. Yet by 1949, Asturias rejected assimilation and adopted an *indigenista* position.[49] This movement of Latin American thinkers embraced indigenous tradition as the basis for a unique national identity. *Indigenista* writing often conflated Marxist rhetoric with indigenous culture, creating a unique ideological position that saw utility in indigenous customs as an antidote to rapid modernization and technological change. Yet there was often little consideration of modern indigenous peoples, their struggles and demands. As José Coronado notes, "lettered indigenismo operates as a mechanism that constantly evokes an indigenous object" while marking a distance between indigenous peoples and Spaniards.[50]

In his 1949 book *Hombres de Maíz*, Miguel Angel Asturias offered a poetic analysis of the struggle to commoditize corn. His novel was a bewildering and fantastic recapitulation of modern Guatemalan history that was inspired by the narrative structure of Mayan literature

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[47] Handy, *Revolution in the Countryside*, 206.

[48] *Men of Maize* was largely written while Asturias was living in France, where his interactions with the Maya were mediated through memory, experts, and artifacts in museums. Asturias qut. In Joel Wainwright, *Decolonizing Development: Colonial Power and the Maya*, (Malden, MA: Blackwell Pub, 2008), 128.

[49] For a classic *indigenista* statement see José Carlos Mariategui, *Seven Interpretive Essays on Peruvian Reality* (Austin: University of Texas Press, 1997). This struggle to balance a desire for development with respect for indigenous tradition was articulated by José Martí, who argued that indigenous resistance to exploitative laws in Guatemala was justified. His critique was a rejection of colonial rule that created and exploited ideas of race to secure control over the territory. This was compounded by modern development discourses that used race to explain differences between regions of the world. Yet it also collapsed real historical and cultural differences in an effort to focus on the common "soul, equal and eternal, [that] emanates from bodies that are diverse in shape and color." Oscar Montero, *Jose Marti: An Introduction*, (London: Palgrave MacMilllan, 2004), 62.

[50] Jorge Coronado, *The Andes Imagined: Indigenismo, Society, and Modernity*. Pittsburgh, Pennsylvania: University of Pittsburgh Press, 2009), 29, 35. For the political development of this movement in Latin America see Marisol de la Cadena, *Indigenous Mestizos: The Politics of Race and Culture in Cuzco, Peru, 1919-1991*, (Durham: Duke University Press, 2000).

including the *Popul Vuh* and the *Book of Chilam Balam*.[51] The central tragedy in *Hombres de Maíz* was set in motion by ladinos who cleared the sacred forest with fire to grow corn for commerce. Asturias wrote:

> What guerillas do to men in times of war, the maizegrower does to the trees. Smoke, flames, and ashes…Sown to be eaten it is the sacred sustenance of the men who were made of maize. Sown to make money it means famine for the men who were made of maize…The earth will become exhausted and the planter will take his little seeds off somewhere else, until he too begins to waste away like a discolored seed fallen in the midst of fertile lands ripe for planting.[52]

The indigenous leader Gaspar Ilóm, in an attempt to set right the balance between nature and man, killed the maizegrowers. Within a few pages, state reprisals destroyed the people of Ilóm, driving Gaspar to commit suicide. The ladino maizegrowers returned to the mountains to resume clearcutting the sacred forest, which Asturias believed was a harbinger of disaster.[53] Like many educated Guatemalans, Asturias struggled to describe a reality where Mayans were neither modern nor traditional; where they could be campesinos and engage in the market without losing their identity and destroying the environment. Indeed, many of the poor maizegrowers he described in conflict with Gaspar Ilóm were indigenous but Asturias believed that they became ladinos once they surrendered to the market.

Historians and anthropologists have recently drawn attention to the resilience of indigenous communities that successfully negotiated the often destructive expansion of state power and capital in the 19th and 20th century.[54] Scholars have identified how cultural markers like clothing have changed as Guatemala's indigenous communities adapted to state-backed attempts to assimilate them.[55] However, they have treated the maizefield—the space that sustains

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[51] Guatemala is never explicitly mentioned, as the work addresses themes common to most Latin American countries. Miguel Ángel Asturias and Gerald Martin, *Men of Maize*, (London: Verso, 1988), xviii, xxiii.

[52] Asturias notes that some who cleared the forest were themselves poor, and shared what little money that could be made with their 'bosses'. Asturias et al., *Men of Maize*, 11.

[53] Asturias worried that without the *men of maize* to attend to the sacred forest, Huitzilopochtli, the god fire and war sometimes called the "hummingbird of fire", would ravage the earth bringing ruin to all men. Asturias et al., *Men of Maize*, 25, 326 fn. 100.

[54] Florencia E. Mallon, *Peasant and Nation: The Making of Postcolonial Mexico and Peru*. (Berkeley: University of California Press, 1995); Marisol de la Cadena, *Indigenous Mestizos: The Politics of Race and Culture in Cuzco, Peru, 1919-1991*, (Durham, NC: Duke University Press, 2000); Carlota McAllister, *Good People: Revolution, Community, and Conciencia in a Maya-K'iche' Village in Guatemala*. Ph. D. Johns Hopkins University, 2003.

[55] Virginia Q. Tilley, *Seeing Indians: A Study of Race, Nation, and Power in El Salvador*, (Albuquerque, N.M: University of New Mexico Press, 2005), 76; This extended to ideas about personal hygiene and diet see Diane M. Nelson, *A Finger in the Wound: Body Politics in Quincentennial Guatemala*, (Berkeley: University of California Press, 1999), 90-93; Marcia Stephenson, *Gender and Modernity in Andean Bolivia*, (Austin: University of Texas Press, 1999), 4, 38.

cultural reproduction—as a durable nucleus of Mayan culture which is insulated from the coercive effects of the market.[56] Studying modern food systems in Mexico, Lauren Baker argues that maize is "a symbol to describe agricultural and food practices grounded in practical farming knowledge, culinary traditions, and local economic exchanges." In contrast, Baker argues that corn is representative of the commoditization of "food production, processing and consumption."[57] This binary draws attention to the benefits of indigenous agriculture, but it also obfuscates the traditional heritage of modern corn hybrids.[58] Anthropologist Laura Fitting similarly recognizes the distinction made between maize and corn, but she cautions that that the emphasis on a "millennial culture of corn obscures how maize-producing communities (or peasantries) are made and remade in interaction with larger [market] forces and processes."[59]

Corn seeds appear static and immutable, but the numerous varieties planted by farmers today are the product of generations of careful selection, migration and exchange. In a 1946 report, plant breeder Irving E. Melhus observed that Guatemala's rich diversity in corn landraces was the by-product of trade and migration. Mayans farmers, he wrote, took corn seeds with them wherever they went and planted them in the ground wherever they lived.[60] However, the relationship between campesinos and their seeds began to change rapidly during the 1940s as plant breeders used indigenous varieties to create new, highly productive corn hybrids. Like their Mexican counterparts, Guatemalan scientists created new hybrids that were well adapted to industrial agriculture.[61] INFOP used its experimental plantations to demonstrate the productivity of hybrids and mechanization. In a 1951 press tour of INFOP's Cuyuta plantation, reporters were awestruck by the "golden river" of corn that was being dried. They believed this was a "symbol

[56] Elizabeth M. Fitting, *The Struggle for Maize: Campesinos, Workers, and Transgenic Corn in the Mexican Countryside* (Durham, N.C.: Duke University Press, 2011), 13.
[57] Lauren E. Baker, *Corn Meets Maize Food Movements and Markets in Mexico* (Lanham, Maryland: Rowman & Littlefield Publishers, Inc., 2013), 49. See also Jim Handy, "The 'non-economy' and the Radical Dreams of Food Sovereignty," Paper Presented at *Food Sovereignty: A Critical Dialogue*. Yale University, September, 2013.
[58] The use of genetically modified seeds, or GMO's is restricted in Guatemala. However there is growing concern that corn seeds have become contaminated by GM corn imported for consumption. Liza Grandia, "Modified Landscapes: Vulnerabilities to Genetically Modified Corn in Northern Guatemala," *The Journal of Peasant Studies*, 41:1 (2014): 86.
[59] Fitting, *The Struggle for Maize*, 13.
[60] Irving E. Melhus, J.R. Wallin, and George Semeniuk, "A Summary of Some Maize Researches in Guatemala," *Plant Research in the Tropics* (Iowa: Agricultural Experiment Station, Iowa State College, 1949), 541. Melhus was searching for corn varieties that could strengthen North American commercial corn crops. For more on this north-south exchange see Tore C. Olsson, *Agrarian Crossings: Reformers and the Making of the U.S. and Mexican Countryside* (Princeton, New Jersey: University Press, 2017).
[61] Joseph Cotter, *Troubled Harvest: Agronomy and Revolution in Mexico, 1880-2002* (Westport, Conneticut: Praeger, 2003).

of the increase of production by mechanical means."[62] The Revolutionary government hoped that these new hybrids would be adopted throughout the countryside, but their main purpose was to enable industrial-scale corn production on the Pacific Coast. [63] Hybrid corn and cotton seeds were the wedge that helped to open a new agricultural frontier for industrial agriculture, the Pacific Coast.

Hybrids did not initially represent a problem for campesinos, who were at best curious about the seeds and at worst indifferent. Throughout the Revolution campesinos continued to cultivate corn—hybrids and criollo varieties—in addition to new crops. As an open pollinator "promiscuous" corn is biologically predisposed to cross-breed with other varieties and can be fertilized by far away fields. This made it difficult to control and commodify the seed.[64] INFOP and other government agencies tried to push hybrids into circulation during moments of social upheaval, including as disaster relief in 1950 and as material support for Decree 900 beneficiaries in 1952. These initiatives were also supposed to support campesinos and the state provided campesinos with technical and financial support. The widespread transition to hybridized seeds and new farming technologies occurred after the coup, driven by changes in land tenure, increased pressure to enter the market and accelerating hunger.

As the demand for plantation labour expanded after the coup and the productivity of highland farms fell, many campesinos had to use fertilizers and pesticides to sustain their production on shrinking plots of land. The promise of these technologies was undermined by their long-term side-effects. As campesinos and smaller farmers adopted input-oriented agriculture, they lost control over the means of production and became dependent on chemicals and seeds that they had to buy on the market. In his influential analysis of hybrid corn in the United States, Jack Kloppenburg argued that 20th century farmers went through "a process of primitive accumulation characterized by the progressive separation of the farmer from certain (though not all) of the means of agricultural production (e.g., seed, feed, fuel, motive power),

[62] "Opiniones Sobre El INFOP: El INFOP y la Mecanización Agrícola en Guatemala," *Monitor del INFOP* Vol. 2 No. 7 (1951), 20.
[63] Roberto Arellano Bonilla, "El Maíz Amarillo Dorado de Tiquisate: Informe Sobre el Primer Ensayo de Cultivo del Maíz, Totalmente Mecanizado, Hecho en la Costa Sure fe Guatemal for el Instituto de Fomento de la Produccíon," *Chacra (Argentina)* 22, no. 254 (1952): 10-11.
[64] Jack Ralph Kloppenburg, *First the Seed: The Political Economy of Plant Biotechnology, 1492-2000* (Madison, Wisconsin: University of Wisconsin Press, 2004), 10. For an example of corn's ability to rapidly adapt to different micro-climates see James McCann, *Maize and Grace: Africa's Encounter with a New World Crop, 1500-2000*. (Cambridge, Mass: Harvard University Press, 2007).

which come to confront him as commodities."[65] Small producers often struggled to keep up production after an initial burst of productivity, applying increasing quantities of fertilizers and pesticides with deleterious effects on their health and the surrounding environment.[66] The dependence on inputs also exacerbated social inequality within indigenous communities.[67] Guatemalan experts often blamed these problems on campesinos, but it was part of the externalized environmental costs of export agriculture and it intensified significantly after the coup.[68]

Guatemalan elites have historically celebrated large coffee, banana and cotton plantations as symbols of progress while campesino corn fields have been derided as backward and even destructive. However, this ignored the fundamental connection between these two agricultural systems: the productivity of modern plantations was underwritten by the impoverishment of campesinos. For example, the rapid growth of coffee production in the 19th and early 20th century undermined the viability of many indigenous communities by curtailing their access to land. This was especially evident on the Pacific Piedmont. Impoverished campesinos migrated seasonally to labour on coffee plantations. The impoverishment of Highland communities created pools of seasonal, migrant labourers. Plantation owners paid migrant campesinos low wages and offered them minimal benefits, aware that most were driven to work on coffee plantations because of hunger and debt. Commenting on the state of coffee production in the early 20th century, historian David McCreery concluded that seasonal migration damaged the health of indigenous labourers and had negative effects on their maizefields. Over decades, campesino fields suffered "in a crisis of decapitalization, neglect, and overcropping."[69]

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[65] Kloppenburg, *First the Seed*, 10-11.
[66] David Carey, Guatemala's Green Revolution," 299-303; Sonia I. Arbona, "Commercial Agriculture and Agrochemicals in Almolonga, Guatemala," *Geographical Review*, Vol. 88, No. 1 (Jan. 1998), 47-63;
[67] Watanabe, *Maya Saints and Souls in a Changing World*, 131-138; Thomas Sikor and Pham Thi Tuong Vi, "The Dynamics of Commoditization in a Vietnamese Uplands Village," *Journal of Agrarian Change*, vol. 5 no. 3 (July 2005): 406-407.
[68] Manuel González de Molina and Víctor Toledo suggest that the co-dependence of these two very different systems of agriculture is best captured by the idea of metamorphosis, which "admits variably lasting hybrid forms in which metabolism is neither entirely organic nor industrial." Industrial agriculture secured abnormally high productivity by introducing energy-sources derived from fossil fuels, beginning with the petroleum that powered tractors and extending to the pesticides and fertilizers that became synonymous with modern agriculture throughout the west. Organic agriculture could only intensify production within the limits imposed by the sun and human labor, although farmers cleverly found ways to amend soils with natural fertilizers like manure, intercropping and rotations. Manuel González de Molina and Víctor M. Toledo, *The Social Metabolism: A Socio-Ecological Theory of Historical Change*, (Springer, 2014), 318; Fridolin Kraussman, "Milk, Manure, and Muscle Power: Livestock and the Transformation of Preindustrial Agriculture in Europe," *Human Ecology* vol. 32 (2004): 735-772.
[69] McCreery, *Rural Guatemala*, 332.

Industrial agriculture presents an attractive vision of bountiful harvests, but high yields are sustained by deferring the social and ecological costs of production onto neighboring eco-regions or into the future.[70] This contradiction was especially evident on Guatemalan cotton plantations, which benefitted tremendously from the new technologies and financial supports for farmers introduced during the Revolution. They rejected any efforts to regulate cultivation and focused narrowly on maximizing productivity. Without state regulation, cotton growers were notorious for their disregard for workers and their excessive use of pesticides and fertilizers. These plantations maintained artificially high yields by deferring the costs of production on workers and the surrounding environment. Plantations recorded high yields on new land for roughly five years, but after the initial store of nutrients were exhausted cotton growers used pesticides and fertilizers to sustain high yields. Uneducated and very poor migrant labourers were also frequently exposed to diseases and pesticides that caused illnesses and death.[71] Charles Brockett's survey of Central American export agriculture identified internal migration as the engine that powered modern Guatemalan plantations and by the 1970s, 60% of the working population in the highlands migrated to the coast.[72] Lester Schmid's study of migratory labour found that living conditions on cotton plantations were worse in just about every respect—except pay—than those on sugar or coffee farms. Their costs of living still exceeded income by nearly 100% and most migrants depended on small pieces of land in the highlands to survive during the off-season. Migrants regularly ate double the recommended amount of corn and excessive amounts of beans and sugar. [73]

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[70] John Soluri, *Banana Cultures: Agriculture, Consumption, and Environmental Change in Honduras and the United States*, (Austin: University of Texas Press, 2005), 239.

[71] Joseph Stevenson, *Cotton Production in Central America*, (Washington, D.C.: USDA Foreign Agricultural Service, 1964).

[72] Charles D. Brockett, *Land, Power, and Poverty: Agrarian Transformation and Political Conflict in Central America*, (Boston: Unwin Hyman, 1988), 87; Rokael Cardona, "Descripción de la Estructura y Económica del Agro Guatemalteco 1954-1975," *Política y Sociedad*, 6, (1978), 36-37; Jeffrey M. Paige, *Agrarian Revolution: Social Movements and Export Agriculture in the Underdeveloped World* (New York: Free Press, 1975), 361; Washington Office on Latin America, *Guatemala: The Roots of Revolution* (Washington, D.C., 1983).

[73] Lester James Schmid, "The Role of Migratory Labor in the Economic Development of Guatemala," PhD. Dissertation. (University of Wisconsin - Madison, 1967), 10-12; Julio M. Jiménez, "A Critique of the Policies and Attitudes Affecting Cotton Agriculture in Guatemala through a Study of its Development," M.A. Thesis. University of Texas, Austin, 1967. Mavis Ann Bryant, "Agricultural Interest Groups in Guatemala," M.A. Thesis (University of Texas, Autsin, 1967). Richard Adams, ed., "The Cost of Growth: The Expansion of Cotton," in *Crucifixion by Power: Essays on Guatemalan National Social Structure, 1944-1966*, (Austin: University of Texas Press, 1970).Robert G. Williams, *Export Agriculture and the Crisis in Central America*, (Chapel Hill: University of North Carolina Press, 1986), 37.

In the 1970s, anthropologist Richard Adams wrote a short but influential indictment of the cotton industry which criticized growers for focusing on economic growth at the expense of the environment and workers. "Such growth," concluded Adams, "is illusory, since there is hardly any cumulative product for the nation aside from the loss of good land."[74] Across Central America, cotton production began a sudden, precipitous decline in the 1970s. By the early 1980s, Guatemala's cotton boom was over and most plantations on the Pacific Coast began a transition to new agro-industrial crops including oil palm.[75] This sudden reversal in fortunes was driven by a drop in global cotton prices and the rising costs of fertilizers and pesticides. After the cotton industry collapsed, environmental activists and scholars documented the disturbing social and environmental costs of cotton production.[76] This work helped to expose the link between agricultural modernization, environmental destruction and state violence.

Historians have—justifiably—emphasized the overwhelmingly negative political and social consequences of commodity production and export agriculture in Guatemala.[77] This focus on the violence of industrial agriculture and its association with the post-coup era has inadvertently simplified the complex social and environmental history of agriculture in Guatemala.[78] Scholars have overlooked efforts by campesinos and workers to engage with new commodities and agricultural technologies.[79] They have also tended to regard the state as inherently insensitive to the needs of the rural poor. As a result, scholars have not explored

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[74] Adams, *Crucifixion by Power*, 378.

[75] For a description of this transition see interview with Grupo OLMECA, S.A. owner Felipe Molina. Larry Luxner, "Palm Oil: Guatemala's Newest, Biggest Cash Crop?" *Tico Times*, May 10, 2014. http://www.ticotimes.net/2014/05/10/palm-oil-guatemalas-newest-biggest-cash-crop

[76] The best works are Robert G. Williams, *Export Agriculture and the Crisis in Central America*, (Chapel Hill, N.C.: University of North Carolina Press, 1986) and Daniel Faber, *Environment Under Fire: Imperialism and the Ecological Crisis in Central America*, (New York: Monthly Review Press, 1993). See also Bill Weinberg, *War on the Land: Ecology and Politics in Central America* (London: Zed Books, 1991); David Weir and Mark Schapiro, *Circle of poison: Pesticides and People in a Hungry World*, (San Francisco, CA: Institute for Food and Development Policy, 1981).

[77] For a long term analysis of resource extraction in Central America that influenced subsequent historical analysis see Murdo J. MacLeod, *Spanish Central America: A Socioeconomic History, 1520-1720*, (Berkeley: University of Californian Press, 1973). Historian Mark Carey argues that Latin American environmental history needs to move beyond "laments" about resource extraction so that it can consider the complex interactions between global markets, transportation, labor, the environment, culture and the sciences. Mark Carey, "Commodities, Colonial Science, and Environmental Change in Latin American History," *Radical History Review*, (Spring 2010): 107, 185-193.

[78] For an early and influential example of this multi-dimensional violence Vandana Shiva, *The Violence of the Green Revolution: Third World Agriculture, Ecology, and Politics*s (London: Zed Books, 1991), 11.

[79] For the call to pay closer attention to the resilience of peasant foodways in the face of export agriculture see John Soluri. "Campesinos and the Hidden History of Biodiversity," in *RCC Perspectives: New Environmental Histories of Latin America and the Caribbean,* eds. Claudia Leal, José Augusto Pádua, and John Soluri, no. 7 (2013): 67–72.

Revolutionary-era efforts to introduce new crops, agricultural technologies and financing opportunities as a means to build a more equitable and sustainable economy. This effort to modernize Guatemalan agriculture was not without problems. Experts, for example, ignored the complexity of indigenous maize cultivation and imposed a replacement that was heavily dependent on costly inputs including fertilizers, pesticides and seeds. However, exploring agrarian modernization as it was implemented during the Revolution sheds light on an alternative model for economic development that tried to balance productivity with greater social equality. This aspiration was enshrined in INFOP's motto: "Produce More to Live Better."

Chapter Overview

The dissertation emphasizes the role of the environment and campesinos on the Guatemalan Revolution, complicating the traditional political narrative. In June of 1944, the dictator General Jorge Ubico resigned after almost fourteen years in office. He was forced to relinquish power by a coalition of students, professionals and workers. After Ubico left, Guatemalans began organizing new political parties and two major parties emerged: the Popular Liberation Front (FPL) and the National Renovation (RN). They also began to search for candidates that could run in the upcoming presidential election. Progressives eventually settled on Juan José Bermejo, a moderate professor living in exile in Argentina. Meanwhile, conservatives found a new leader in Federico Ponce Vaides. He quickly emerged as the leader of a military triumvirate that assumed power after Ubico resigned. Ponce declared his intention to run for President, and used the military to repress students and professionals. On October 20th of 1944, members of the Guardia de Honor and the company of cadets led a revolt that ousted Ponce and established a new junta. This included Major Francisco Arana, Captain Jacobo Arbenz Guzmán, and the civilian Jorge Toriello. The new junta helped to draft a new constitution and then, in March 1945, they passed power to President Arévalo.[80]

Arévalo's term in office was marked by political strife and turmoil. Shortly after he was elected, the FPL and RN merged to form the Revolutionary Action Party (PAR). This union was short lived and the PAR began splintering again in 1946, amidst concern that the party was moving too far left. The PAR continued to be the most important political party throughout the Revolution, but there was significant political conflict between rival parties. Despite this,

[80] Handy, *Revolution in the Countryside*, 23-25, 31-32.

Arévalo's administration successfully passed a rash of new laws that reshaped the country's labor laws, created new opportunities for campesinos to access land, and opened up new government offices dedicated to social security and rural development. These legislative changes were impressive on paper, but they did not effectively redress systemic inequality. This was a byproduct of Arévalo's own belief in a "spiritual socialism," that emphasized self-discipline over material redistribution. This was compounded by Arévalo's political dependence on the conservative Major Francisco Arana, who actively prevented the President from implenting reforms that favored workers and campesinos. Following the death of Major Arana in 1949, the Arévalo administration purged the military of his hardline supporters and this created an opportunity for substantive change in Guatemala.[81]

The election of Jacobo Arbenz marked a major shift in the Revolution. He came to power promising major land reforms as a means to address systemic inequality and chronic food production problems. His government drafted and then passed an Agrarian Reform Law in 1952 that was both well-implemented and unusually decentralized. The government asked campesinos to organize in Local Agricultural Committees and initiate an expropriation process. The denunciations were then evaluated by an agronomist, a Departmental Agrarian Committee and the National Agrarian Department before they were reffered to the President. Thousands of families received land through the Agrarian Reform Law, but the massive transfer of land from elites to campesinos angered Guatemalan conservatives and multinationals operating in the country. They alleged that Arbenz had let communists take over the country, transforming the banana republic into a communist safe-haven. When the U.S. helped organize a coup in 1954, Arbenz was forced to resign because the military abandoned him. Along with Guatemalan elites, conservatives in the military were afraid that the growing power of Guatemala's largely indigenous campesino population would plunge the country into political turmoil. In most historical accounts, the resignation of Arbenz was the moment the Revolution ended. The following chapters complicate and nuance this narrative by demonstrating that campesinos were active participants in the rural development projects undertaken during the Revolution. I emphasize how environmental factors—drought, deforestation, and tropical storms—shaped the political events that unfolded during and after the Revolution.

[81] Handy, *Revolution in the Countryside,* 182-183; Forster, *The Time of Freedom,* 168.

Chapter 1 explores government efforts during the early 20th century to diversify the Guatemalan economy and reduce the country's dependency coffee production. Early modernization efforts were influenced by the United Fruit Company, which successfully established banana plantations in agrarian frontiers that had not been heavily developed. The United Fruit Company conquered these new regions by deploying "the machine," using new agricultural technologies to produce bananas for export. This was not a sustainable model of production, but its evident productivity influenced the Guatemalan government and encouraged them to promote new exports like cotton on the Pacific Coast. Though the coastal plains were extremely fertile, farmers struggled unsuccessfully to establish cotton plantations because their crops were quickly destroyed by pests, pathogens, and weather conditions. Apprehensive about crop failures, large landowners focused their efforts on coffee production because it offered reliable income. By 1944, proponents of agrarian modernization broadly agreed that Guatemalan agriculture was stagnating because farmers had not embraced new productive technologies and rural poverty was detrimental to productivity. Conservatives and progressives disagreed about potential solutions. More conservative modernizers believed that the state should focus on disseminating productive technologies and increasing the capital available for farmers, especially large landowners. Progressive modernizers believed that Guatemala could diversify the economy and reduce inequality by encouraging campesinos to become modern farmers.

The second chapter examines early agrarian modernization initiatives and government efforts to reform campesino agriculture. Modernizers believed that traditional corn cultivation was inefficient and caused rural deforestation that precipitated soil erosion and landslides that threatened lowland communities and plantations. This expert analysis was driven by ideology and did not accurately reflect the benefits of traditional corn cultivation, which were reported by scholars who worked closely with indigenous communities. Modernizers focused narrowly on the perceived threat to Guatemalan agriculture and used the threat of deforestation as a pretext for urgent government intervention in the countryside. The state considered paternalistic conservation measures to save the Maya from poverty, including resettlement. These regulations often reflected the profound discomfort of Guatemalan elites who did not know how to incorporate indigenous citizens into the state. Government efforts to transform milpa cultivation ignored systemic factors driving deforestation and soil erosion, including overpopulation, land shortages and poverty. It was the expansion of export agriculture throughout the 19th and 20th

centuries that fostered unsustainable land use patterns throughout the highlands, rather than a purportedly traditional indigenous agriculture.

Chapter 3 explores efforts to encourage campesinos to modernize during the Presidency of Juan José Arévalo (1945-51), which led to the creation of the Institute for Encouraging Development (INFOP) in 1948. Progressives realized quickly that they had relatively little concrete knowledge about the landscape they hoped to transform, and they funded research led by international experts which assessed soil quality, forest resources and new crops including hybrids. As new information came in from throughout the countryside modernizers were both elated by Guatemala's agricultural prospects and desperately concerned about Guatemala's pronounced dependency on coffee and corn. Extension work and experimental farms became the main focus of rural development work during this period and the state hoped to awe campesinos and farmers with visions of abundance secured using new productive technologies: fertilizers, pesticides, hybrid seeds and mechanization. The Ministry of Agriculture created General Agents of Agriculture who were anointed as "apostles" in the government's fight against soil erosion and deforestation. They travelled widely throughout Guatemala's countryside, establishing new experimental farms and demonstrating the benefits of modern agriculture. The agents also became conduits for state power. Campesinos circumvented local authorities by addressing complaints to agents, who relayed them directly to the Minister of Agriculture. Their reports offered detailed insight into the complex financial and political problems restricting agricultural growth. It quickly became apparent that extension work could not secure rapid modernization without substantive rural reforms that challenged Guatemala's large landowners.

The fourth chapter examines the creation of INFOP, a semi-autonomous government agency that integrated extension work and research. The new government agency implemented an ambitious and progressive rural development agenda focused on the financial, technological and political barriers to modernization. INFOP worked to create a diversified rural landscape, which included a broader range of crops grown by campesinos and large landowners. Their mandate was ambitious, but even sympathetic landowners (like the future President Jacobo Arbenz) struggled to introduce agrarian modernization on their farms because doing so challenged existing social and environmental arrangements. INFOP was able to secure broader participation in agrarian modernization after a disastrous hurricane in 1949 which displaced thousands and destroyed food crops. The institute freely distributed hybridized seeds and began

aggressively promoting a new "conservationists doctrine" which encouraged rural development schemes that prioritized long-term agrarian productivity. They utilized their own Cuyuta plantation to experiment with new crops and land tenure arrangements, incubating new hybrids of corn and cotton. The social and agricultural changes introduced during this period catalyzed a transformation of Guatemalan agriculture which preceded the better known Agrarian Reform Law, passed in 1952.

Chapter 5 explores the social and environmental consequences of the Agrarian Reform Law (Decree 900), which was passed in the summer of 1952. When Jacobo Arbenz became President in 1951, one of his first actions in office was to address growing anxiety about food prices which had spiraled out of control after the 1949 rainstorms. He insisted that the government would investigate the causes of potentially destabilizing food problems and pledged his continuing commitment to an agrarian reform that would rapidly modernize Guatemalan agriculture. The Agrarian Reform Law allowed campesinos to organize and denounce plantations that did not utilize their land effectively. Large landowners tried to prevent expropriation by rapidly clearing and planting their land with crops favored by the government, including cotton. Nearly 100,000 families received land across the country. The lightly populated Pacific Coast was gripped by rapid and unprecedented environmental change, as landowners and campesinos cleared forests and intensified agricultural production on former pasture land. When the agrarian reform was overturned after the 1954, large landowners argued that campesinos wasted the land they obtained. This chapter contends that Decree 900 beneficiaries worked closely and enthusiastically with technicians to modernize and improve their new land. However, the Arbenz government lacked the financial and technical capacity to properly support thousands of new farm operators and so many recipients were forced to plant traditional crops to survive their first year on new land.

The sixth chapter documents the agrarian landscape that was created after the coup. The new regime and large landowners embraced agrarian modernization's potential to increase yields, but they rejected efforts to reform financial and technical infrastructure to benefit campesinos. The rapid and violent reversal of the agrarian reform after the 1954 coup devastated food production and allowed large landowners to consolidate their power over labourers. President Castillo Armas mitigated the collapse of rural corn production by importing food aid from the United States. He blamed economic problems on the misguided policies of Arbenz and

the new administration created a rural development plan that heavily favored private capital. The government borrowed large amounts from the United States and the International Bank for Reconstruction and Development (IBRD) to fund an ambitious infrastructure project designed to facilitate the growth of export agriculture. Cotton production exploded during this period, as large landowners contracted generous and cheap loans from the state which encouraged them to rapidly develop new land. At the same time, the government tried to contain and capture the rhetoric of the agrarian reform with planned Agrarian Development Zones that resettled a handful of carefully selected farmers on coastal plantations. During the Revolution modernizers tried to transform Guatemala's agrarian production by empowering Guatemala's poorest, but after the coup the state actively supported large landowners and encouraged campesinos to work on coastal plantations. Agricultural modernization was supposed to decrease rural inequality and foster crop diversity, but after 1954 Guatemalan elites used the new technologies introduced during the Revolution to enrich themselves with disastrous social and environmental consequences.

Chapter 1: Guatemala's Lost Paradise

On October 20, 1944, a popular revolution removed the last remnants of Jorge Ubico's administration, bringing a definitive end to a 14-year dictatorship. There was widespread elation in Guatemala and within months Juan José Arévalo became the country's first democratically elected President. Arévalo inherited a country that was heavily dependent on coffee production and struggling with chronic food shortages. Guatemala had endured several years of bad weather in the 1940s, causing crop failures and reduced yields throughout the countryside. By early 1945, systemic problems in Guatemala's food system became apparent and the country faced widespread corn scarcity, inflation, and speculation.[82] This moment of crisis followed decades of rhetoric by elites who promoted Guatemala as a paradise in constant bloom. This land of eternal spring was sold to potential investors as a region apt for agricultural development, with fertile soil, a favorable climate and abundant labour. Yet elite faith in the fecundity of Guatemala's tropical soils also fostered widespread neglect of domestic agriculture. Progressives worried that Guatemala's paradise had been lost to greed and neglect.

The *Revista Agricola*, the Ministry of Agriculture's official periodical, tried to identify the precise cause of Guatemala's food shortages and declining productivity. In January 1945, they wrote:

> If there is a country where agricultural production is incalculable it is Guatemala. We are with reason children of the land, but by repeating the story of the eternal spring, we have come to believe that we are in Jauja. But when you look closely around us the illusion of Jauja disappears and we are left with a gloomy picture. How is it possible that there is scarcity, [and] that the crops do not yield enough to feed the country modestly?[83]

The idea of Jauja—a land of milk and honey or a paradise—recalled the famous poem "La Tierra de Jauja" written by Lope de Rueda in 1547. The story features two hungry thieves who conspire to steal food from a simple man, by distracting him with tales about the paradise of Jauja.[84] The *Revista Agricola* indicted the Ubico administration for misleading Guatemalan people about the country's agricultural riches. They argued that Ubico's agricultural policy had rendered Guatemala dangerously dependent on coffee: a monoculture that produced wealth for small limited elite and was susceptible to the fluctuations of global markets. The editors of the *Revista*

[82] Leopoldo Zeissig, *Guatemala: Paraíso Perdido*, (Guatemala: Imprenta Hispania, 1946), 29.
[83] Dirección General de Agricultura, "Perspectivas Incalculables para la Agricultura en Guatemala," *Revista Agrícola* 1, no. 3 (January 1945): 99.
[84] Lope de Rueda, Fernando González Ollé, and Vicente Tusón. *Pasos*. Madrid: Cátedra, 1981.

Agricola endorsed an alternative model of "polyculture" that supported a diverse array of crops. They believed that new crops would create economic opportunities for small farmers; their growth would democratize the countryside, generate new revenue streams, and stabilize food production.[85]

Though progressives couched their crusade against monoculture in a rhetoric of social welfare, they were not the first Guatemalans to identify the threat posed by dependency on coffee. The following chapter examines government efforts to address Guatemala's dependency on coffee and instabilities in food production before 1944. In the early 20th century, agronomists and policymakers attempted to diversify agricultural production by introducing alternative crops and expanding the area under cultivation to include the Pacific Coast. This early modernization work was inspired by the perceived productivity of United Fruit Company plantations, which flourished in the undeveloped lowlands that Guatemalans associated with pestilence. Elites largely agreed that large, export-oriented plantations were the most effective tools for producing economic growth for the state and jobs for the rural masses. The state encouraged private growth by keeping taxes and regulations minimal. However, they created few effective incentives to encourage farmers to adopt new crops and efforts to promote alternative crops like cotton, oil palm and rubber had limited success. The failure of these early diversification initiatives opened up a political space for critique framed in the language of agrarian modernization. On the eve of the Revolution, critics advocated for a new model of rural development that embraced agrarian modernization but focused on the necessity of empowering campesinos and small farmers.

Wealth of the Tropics

Guatemala's anemic rural development and her modern reliance on large monocultures like coffee were caused by centuries of resource extraction by elites searching for quick riches. During the colonial era, conquistadors and their descendants roamed across Central America searching for easy wealth in silver, slaves and cacao.[86] Guatemalan elites continued their search for a stable, lucrative export commodity throughout the 18th and 19th century. Indigo, cochineal, and, for a brief time, cotton were favored as exports but each commodity collapsed under a combination of external competition, plant diseases and poor transportation infrastructure that

[85] Dirección General de Agricultura, "Perspectivas Incalculables para la Agricultura en Guatemala," 99-100.
[86] Murdo J. MacLeod, *Spanish Central America: A Socioeconomic History, 1520-1720* (Berkeley: University of California Press, 1973); David McCreery, *Rural Guatemala, 1760-1940* (Stanford: Stanford University Press, 1994).

made affordable exportation nearly impossible.[87] In the mid-19th century, coffee emerged as a promising commodity. Guatemala's social, economic and environmental landscape was rapidly transformed as plantation owners tried to satisfy growing global demand for coffee. The success of coffee encouraged the Guatemalan government to prioritize export-led development as a means of economic development, discouraging investments in alternative crops or domestic agriculture.

When Guatemalan farmers began experimenting with coffee in the 1840s, few understood the ideal conditions needed to grow this non-native shrub. Coffee was initially introduced as a supplement to cochineal, a popular export that was light and easily transported across Guatemala's rugged terrain. Landowners in established regions like Amatitlán and Antigua intercropped coffee with cochineal because they believed the shrub was a "hedge against the dangers of monoculture."[88] In less established agricultural zones like the Lower Pacific Piedmont, plantation owners often gambled on new crops like coffee hoping that they might become hot trade commodities. In the 1860s, coastal landowners searching for the next big crop tore up "flourishing cacao plantations to plant cotton that soon succumbed to diseases, and then coffee trees that withered and died in the heat."[89] These plantations tried to prevent disease by applying lessons learned from Colo5mbian and Costa Rican coffee growers, but local conditions differed enough that this did not help them avoid devastating crop losses.[90]

Coffee growers eventually focused their cultivation efforts in two relatively undeveloped regions: Alta Verapaz and the Upper Pacific Piedmont.[91] Experts encouraged plantation owners to establish their farms on undeveloped land where the rich layer of hummus and organic matter helped delicate coffee trees grow. Newly cleared land was highly productive and required less upkeep to control pathogens, pests and weeds. Successful plantations also tried to control large

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[87] Ralph Lee Woodward, *Rafael Carrera and the Emergence of the Republic of Guatemala, 1921-1871* (Athens and London: The University of Georgia Press, 1993), 376, 380.

[88]McCreery, *Rural Guatemala*, 162. Cochineal was a dye extracted from the insects that ate nopal plants. It was produced on relatively small farms using modest amounts of labor. Britain was the main market, until the invention of synthetic dies undermined the industry. Woodward, *Rafael Carrera and the Emergence of the Republic of Guatemala*, 376, 380

[89] McCreery, *Rural Guatemala*, 6, 162.

[90] For agricultural research in Colombia, see Stuart McCook, *States of Nature: Science, Agriculture, and Environment in the Spanish Caribbean, 1760-1940*, (Austin: University of Texas Press, 2002, 111-127.

[91] There were also significant plantations around Alta Verapaz. Christiane Berth, "Between 'Wild Tropics' and 'Civilization': Guatemalan Coffee Plantations as Seen by German Immigrants," *Comparing Apples, Oranges, and Cotton*, ed., Frank Uekötter, (Frankfurt/Main: Environmental Histories of the Global Plantation. Campus, 2014), 113-138.

swathes of land, because soil fertility varied considerably across the Pacific Piedmont. Problematically, the best agricultural land in this region was already actively used by the Maya.[92] Many indigenous communities farmed land in the highlands and on the coast to reduce the risk of crop failures. This strategy also greatly increased dietary diversity because tropical crops grown on the coast like cacao, sugar, fruits and corn—which can be harvested twice a year on the coast—complemented temperate crops grown in the highlands.[93]

The expansion of coffee and other exports throughout the 19th century displaced indigenous communities and progressively undermined their subsistence options. Prior to the 1870s, communities lost land to private interests in a piecemeal fashion. René Reeves argues that during the mid-19th century the ruling Conservatives "turned a blind eye as ladino after ladino invaded the coastal territory of indigenous towns" and established new, export-oriented plantations. The state intervened selectively to repress communities that tried to resist displacement.[94] The Liberal Reforms of 1871 escalated this assault on indigenous land by privatizing communal land campesinos used for foraging and firewood.[95] Most communities were already impoverished by decades of exploitation and they lacked the financial resources and political capital to effectively defend their territorial interests on the Pacific Coast.[96] The rapid privatization of land enabled coffee planters to rapidly expand during the late 19th century. It gave large landowners the ability to borrow against their land—mitigating capital shortages

[92] Note that this was general advice for plantation owners offered by Pastor Ospina, *Breve Instrucción para el Cultivo del Algodón en Centro América*, (Guatemala: Imprenta de la Paz, 1864) in Gallini, *Una Historia Ambiental del Café en Guatemala*, 263.

[93] Gallini, *Una Historia Ambiental del Café en Guatemala*, 39-48, 55. Stefania Gallini, "A Maya Mam Agro-ecosystem in Guatemala's Coffee Revolution: Costa Cuca, 1830s-1880s," in *Territories, Commodities, and Knowledges: Latin American Environmental Histories in the Nineteenth and Twentieth Centuries*, ed. Christian Brannstrom (London: Institute for the Studies of the Americas, 2004), 26-27, 31.

[94] Reeves, *Ladinos with Ladinos, Indians with Indians*, 70.

[95] As Grandin notes, they did not directly ban *ejidos*, or community held land, because these actually aided coffee producers by ensuring that Highland communities had the capacity to support laborers who worked seasonally on coffee plantations. Instead, privatization slowly changed the meaning of the word *ejido* which in Quetzaltenango, at the start of the 20th century. Grandin, *The Blood of Guatemala*, 112. For Liberal Reforms, see David McCreery, *Development and the State in Reforma Guatemala*, 1871-1885 (Athens, Ohio: Ohio University, Center for International Studies, 1983).

[96] There were exceptions. McCreery argues that "no town exhibited more persistence and ingenuity in attempting to hold on to and expand community land in the hot country than did Santiago." Between 1870 and 1900, Santiago doubled land held in title and claimed more than 240 caballerias of land. McCreery, *Rural Guatemala*, 254. As Jeffrey Gould has observed in Nicaragua, liberal reforms affected communities differently based on local conditions including leadership, community cohesiveness and the level of force used to take land away. Jeffrey L. Gould, *To Die in This Way: Indians and the Myth of Mestizaje, 1880-1965* (Durham: Duke University Press, 1998), 3.

that historically hindered agricultural growth—easy access to fertile land, and a plentiful pool of labour for new plantations.[97]

Coffee growers and the Liberal government sought to weaken but not destroy subsistence production. Large landowners wanted to encourage migration to the coast during the coffee harvest, but they did not want to maintain labourers on the plantation year-round. By retaining access to land in the highlands, indigenous labourers could combine seasonal labour on coffee plantations with subsistence-oriented agriculture on their small plots.[98] However, economic need was not always sufficient to compel campesinos to work on coffee plantations, where they were paid little and often contracted debts and tropical diseases. To ensure a steady stream of labourers, in the 1870s Liberals resurrected colonial-era forced labour drafts, or *mandamientos*, and passed new vagrancy laws that imprisoned those without an official occupation. By design, these coercive measures forced campesinos in the coffee growing region to take refuge in debt-labour contracts with plantations, which was the only legal protection against conscription. As labour drafts exhausted the supply of workers available for conscription in the vicinity of coffee plantations, government agents moved further into the Highlands seeking fresh bodies.[99] Coffee transformed the landscape of the Pacific Coast, but it also reshaped the Highlands where campesinos depended on waged labour on plantations to supplement their household production.

Liberal reforms to the *mandamiento* system blurred the boundaries between wage and slave labour and precipitated rapid changes in Mayan communities. K'iche' elites around Quetzaltenango, the epicenter of coffee production, tried to protect their privileges by mobilizing indigenous labourers to work on coffee plantations. As labour demands grew, K'iche' elites offered loans to community members. Though this enabled some K'iche' to avoid conscription, turning "indigenous relations of reciprocity into relations of class" precipitated rapid internal differentiation within communities.[100] Government efforts to legislate labour fostered destructive tensions within Mayan communities, but these laws also created opportunities for unexpected

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[97] Solórzano, *Evolución Económica De Guatemala*, 296.
[98] Grandin, *The Blood of Guatemala*, 112.
[99] McCreery, *Rural Guatemala*, 222-223; David McCreery, "Debt Servitude in Rural Guatemala, 1876-1936." *The Hispanic American Historical Review* 63, no. 4 (1983): 735-59; David McCreery, "'An Odious Feudalism': Mandamiento Labor and Commercial Agriculture in Guatemala, 1858-1920," *Latin American Perspectives* 13, no. 1 (1986): 99-117.
[100] "This dependency on money," writes Greg Grandin, "within a more commodified economy transformed indigenous relations of reciprocity into relations of class." Even as they curried favor with the state, K'iche' leaders also tried to establish themselves as leaders of a national movement for "regeneration of the Indian [which] would lead to civil and political equality." Greg Grandin, *The Blood of Guatemala*, 2, 126.

alliances. As Julie Gibbings notes, petitions contesting forced labour on coffee plantations in Alta Verapaz highlighted disagreements between those who believed "Mayas were anti-modern hangovers or actors in making the future." Importantly, those debates often exposed alliances between "ladino indigenistas and Maya patriarchs" that crossed ethnic boundaries and challenged the separation between Maya and Ladino that has defined historical writing about Guatemala.[101] This formed the basis for Revolutionary-era arguments that blamed economic stagnation and poverty on the exclusion of the Maya from the political fabric of the nation.

By the end of the 19th century, Guatemala's economic fortunes were almost wholly dependent on coffee. As long as prices were high, good times prevailed: railway lines were built, telegraph systems installed and the new, coffee growing elite consumed European imports conspicuously.[102] Yet the international price of coffee was volatile and Guatemala competed with many other tropical countries to secure European markets. Guatemala's wealth was her cheap, skilled workforce, fertile soils and intimate connections with German markets.[103] Like cochineal and cotton, coffee experienced a major crisis in 1897 when global prices crashed in response to Brazilian overproduction. The crash sent the Guatemalan economy into a decade-long depression. During this period, many Guatemalan coffee growers lost their farms, which were acquired by more efficient, well-capitalized German plantations that remained more competitive throughout the depression.[104] The concentration of land and capital in the hands of German coffee producers created serious economic problems for Guatemala, as a large amount of capital derived from exports was being redirected overseas. This economic imbalance resulted in a significant deficit in the country's balance of payments that limited the money available for imports.[105]

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[101] Julie Gibbings, "The Shadow of Slavery": Historical Time, Labor, and Citizenship in Nineteenth-Century Alta Verapaz, Guatemala," *American Historical Review* 96, No. 1 (2016): 76, 78.
[102] Michael Kirkpatrick, "Optics and the Culture of Modernity in Guatemala City since the Liberal Reforms," Ph.D. diss. University of Saskatchewan (2013), 26-27.
[103] During the 1870s, Germans invested heavily in Guatemala's coffee sector: buying land and furnishing loans to operators. Regina Wagner. "Los Alemanes En Guatemala, 1828-1944," PhD diss. Tulane University (1991), 297-313.
[104] There were other foreign owners, but Germans were by far the largest group of foreign-born coffee growers in Guatemala. Regina Wagner, William H. Hempstead, Cristóbal von Rothkirch, and Eric Stull. *The History of Coffee in Guatemala*. (Bogotá, D.C., Colombia: Villegas Editores, 2001), 139-140, 144.
[105] Anibal Martinez Muñoz y Bruno Busto Brol, "Agricultura," *Historia General de Guatemala, Tomo V*, (Guatemala: Asociación de Amigos del País, Fundación para la Cultura y el Desarrollo, 1994-1999), 366-367, 369.

After the crash, President Estrada Cabrera put renewed emphasis on crop diversification in a belated effort to limit the state's dependency on coffee exports and to control the "constant threat" of grain shortages. Estrada Cabrera ruled Guatemala for twenty-two years after his predecessor was assassinated in 1898. During his time in office he greatly strengthened the power of the state, which had been previously beholden to Guatemala's elite. In 1899, the Directorate General of Agriculture was formed, with the goal of using the unemployed to colonize underproductive, or "virgin" areas of Guatemala. Those who accepted lands were forced to plants crops dictated by the new Directorate, a subsidiary of the Ministry of Development.[106] The Estrada Cabrera regime encouraged colonization to diffuse simmering rural tensions over access to land and avoid destabilizing corn shortages, but beneficiaries were often pressured to sell land to large plantations. The government passed new regulations in 1912 to discourage land speculation. They forced beneficiaries to wait ten years before they could sell and demonstrate that one third of the land had been put into production.[107] These policies were undermined by the President who secured his own power by dispensing land to favorites and checking access to land for rivals.[108]

Government efforts to restructure land use and diversify agriculture after the crash were largely ineffective. Even though coffee prices fell significantly after 1897, growers were still profiting from coffee exports and they were hesitant to make costly investments in new crops.[109] Estrada Cabrera's capriciousness compounded this problem, since his ego could quickly ruin carefully planned modernization initiatives. When the Samayoa brothers refused to name Estrada Cabrera as a partner in their new lemongrass operation, he denied the authorizations they needed to proceed. The brothers refused to accede to Estrada Cabrera's demands and the project came to nothing, even though they had already negotiated contracts with farmers and bought equipment to process the oil.[110]

In 1900, "*La Republica" Agrícola* published a special bulletin dedicated to agricultural issues that promoted diversification and intensification of agricultural production. The first issue

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[106] Ibid, 363.
[107] Ibid, 366-367; See Jim Handy, "Enfrentándose al Pulpo: Nacionalismo Económico y Cambio Político en Guatemala y Costa Rica en la Década de 1920," *Mesoamérica* 17, no. 31 (June 1996): 15.
[108] Military officials circumvented the 15 caballeria limit per application by registering their entire families to obtain much larger tracts. As much as 81 caballerias was titled to the family of one General in Quezaltenango. Martinez Muñoz et. al., "Agricultura," 380.
[109] Wagner, *The History of Coffee in Guatemala*, 139.
[110] Martinez Muñoz et. al., "Agricultura," 366-367, 380.

discussed Guatemala's lackluster economic performance after the 1897 coffee crash, citing the decline of the cattle industry, the barriers to cotton farming and the high cost of flour. Fernando García, a prominent farmer and columnist for *"La Republica" Agrícola*, speculated that agricultural diversification was hampered by a weak state that did little to educate farmers or encourage them to take economic risks. García argued that farmers were reluctant to experiment with cotton and other new exports because they already knew how to cultivate coffee and could predict their yields and annual returns. He alleged that the chief obstacles to cotton cultivation were "ignorance and routine," factors that could only be overcome by an aggressive campaign of education.[111]

To this end, *"La Republica" Agricola"* published a series of articles promoting cotton as an easy to cultivate and lucrative crop. These articles inadvertently demonstrated the problems with the government's diversification initiative, which struggled to overcome the ecological problems that had abruptly destroyed the first attempt to plant cotton commercially. In the 1860s, the American Civil War reduced US cotton exports and this created an opportunity for Latin American producers to enter into cotton production.[112] In an effort to reduce their dependence on American cotton, British emancipation societies and the textile industry sent seeds to Guatemalan planters.[113] These incentives helped spur production, as did high prices for Guatemalan cotton—considered better than most North American cotton—in London.[114] However, Guatemala's cotton boom was short-lived; pests ravaged the fields in 1864 destroying crops at the peak moment of global demand. The tropical paradise that created bountiful harvests was also inviting to pests and pathogens that thrived on crops grown in monoculture. [115]

Farmers at the beginning of the 20th century remained apprehensive about possibility that their cotton crops might be eradicated by factors beyond their control, but the high price

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[111] "Correspondencia y Consultas," *"La Republica" Agricola* 1, (1901).

[112] Sven Beckert, *Empire of Cotton: A Global History* (New York: Alfred A. Knopf, 2014), 247, 256-258; Stanley J. Stein, *The Brazilian Cotton Manufacture: Textile Industry in an Underdeveloped Area, 1850-1950* (Cambridge, Mass.: Harvard University Press, 1957).

[113] British cotton merchants were increasingly concerned about the economic instability that might come of a dependency on cotton produced by slavery see Beckert, *Empire of Cotton*, 245.

[114] Sven Beckert has argued that the Civil War forced cotton manufacturers and importers to expand cotton production and producers experimented with "new ways to motivate rural cultivators to grow the white gold" that peasants could not eat including coercive wage labor relations. Ibid., 270-272

[115] Solórzano, *Evolución Económica De Guatemala*, 272; Woodward, "Guatemala Cotton and the American Civil War," 93. Woodward, *Rafael Carrera and the Emergence of the Republic of Guatemala, 1921-1871* (Athens and London: The University of Georgia Press, 1993), 387.

encouraged some to experiment. In 1901, J.E. Felice described his various attempts to start a new cotton farm in the Eastern region of Panzos using seeds distributed by the Ministry of Development. Felice urged his fellow farmers to plant cotton because it produced quick returns with minimal risk. Whereas a coffee tree might take 5-7 years to mature, cotton was an annual. If farmers lost cotton plants to disease, weather, or faced low international prices, they could quickly recover their costs the following year or switch to a more lucrative crop. To secure a good harvest, plantation owners needed a steady supply of labour and Felice urged the government to regulate day labourers by "energetically" tackling vagrancy and "laziness" in communities. [116]

This dismissive attitude toward local agriculture proved to be the undoing of Guatemala's second wave of cotton farmers, many of whom lost successive crops to bad seeds, pests and pathogens. A letter from award-winning coffee producer J.J. Rodriguez, of Finca Capetillo near Antigua, complained that the first samples of *Sea Island* cotton seeds given out by the Ministry of Development failed to germinate. He persisted, planting again the next season and he was eventually rewarded with a good cotton crop. Rodriguez attributed his eventual success to inter-planting cotton with corn, a technique that was commonly used by Q'eqchi' farmers. Though Rodriguez's determination eventually paid dividends and he harvested a good cotton crop, his experimentation was heavily subsidized by his award-winning coffee plantation.[117] Rodriguez's case was unique and by 1903, production remained low. There was limited growth on the coast, especially around Escuintla, but most Guatemalan cotton was still produced in the inland Departments of Sololá and Alta Verapaz where traditional cultivation techniques dominated.

In 1904, Orator Cook, a biologist for the United States Department of Agriculture, visited indigenous communities in Alta and Baja Verapaz, searching for the secret that allowed local farmers to harvest respectable yields of cotton despite the presence of the boll weevil. Cook noted that pests and pathogens had caused the "uniform failure" of commercial plantations, which forced Guatemala to import cotton. Cotton cultivated in the Baja Verapaz towns of Salamá and Rabinal was a dry upland variety similar to that grown in Texas except that it was a

[116] J.E. Felice, "El Cultivo del Algodon," *"La Republica" Agricola* 1 (1901): 348-350. Subsequent articles covered the history of cotton and best cultivation practices and were penned by an anonymous author: "El Algodon," *"La Republica" Agricola* 1, no. 17 & 18 (November, 1901); "El Algodon," *"La Republica" Agricola* 1. No. 18 & 19, (November 1901); "El Algodon," *"La Republica" Agricola* 1, no 21 & 22 (December, 1901).
[117] Regina Wagner, *Historia del Café*, 135.

perennial, not an annual. He hypothesized that the boll weevil did not ravage indigenous cotton stands because of a confluence of cultural and biological factors that suppressed the weevil. Cotton stands were almost always found close to homes, and were cut back to the ground every year to promote rapid maturation. Cook believed that domestic turkeys and chickens were "weevil destroyers" because they ate potential pests before they could harm cotton plants.[118] This combination of social and ecological controls on weevils enabled early-maturing cotton plants to produce a respectable yield.

Cook also examined a different, but equally successful strategy of cotton cultivation among the Q'eqchi' of Alta Verapaz. The Q'eqchi' were largely swidden farmers, and grew corn and cotton in fields that could be up to 50 miles from their homes. Whereas cotton was densely clustered around homes in the Rabinal region, Q'eqchi' growing in the Cahabón area of Alta Verapaz separated cotton plants by 3 to 4 feet and planted only six seeds in an area. Two to three plants produced roughly the equivalent yield as one large plant from Texas, or ten to twenty five bolls. Importantly, indigenous farmers inter-planted cotton with peppers and would tear out the cotton after the first wave of bolls opened. This selected for early maturing cotton plants which, in conjunction with a local 'kelep' ant that preyed on the boll weevil, allowed Q'eqchi' farmers to produce a respectable yield of cotton. Though smaller than boll's harvested in Texas, analysis showed that the cotton fibers were good quality and suitable for sale in the US. Cook's interest in Guatemalan cotton was driven by an acquisitive desire to collect, return and introduce boll-weevil eating kelep ants Texas.[119] He was fixated on the kelep ant as a means of boll-weevil control. He dismissed the role of indigenous farmers, whom he characterized as primitive and "unconscious" actors in the process of cotton cultivation.

Though flawed, Cook's work demonstrated that Guatemala could successfully grow cotton. Mayan campesinos produced cotton "under cultural and climactic conditions that in Texas would result in the total destruction of the crop."[120] Plantations that stubbornly tried to impose a modern, monoculture model of cotton cultivation were unlikely to prosper without

[118] Orator F. Cook, "Cotton Culture in Guatemala" *Yearbook of Agriculture* (Washington, D.C.: United States Department of Agriculture, 1904), 480.
[119] For more on Cook and his study of 'kelep' ants see S. Eben Kirksey, "Interspecies Love in an Age of Excess: Being and Becoming with a Common Ant, Ectatomma ruidum (Roger)," Yale Program in Agrarian Studies Colloquium, October 2011. Accessed December 15, 2016.
http://www.yale.edu/agrarianstudies/colloqpapers/07kirksey.pdf
[120] O.F. Cook, "Cotton Culture in Guatemala," 485.

significant ecological interventions to stave off attacks from local pests and plant diseases. However, farms that learned from indigenous cultivation practices and grew cotton as part of a diverse farm system could produce respectable yields. Absent active and sustained government support, entrepreneurial spirit by itself could not overcome the ecological challenges to cotton production on the Pacific Coast. In 1908, the Estrada Cabrera regime tried unsuccessfully to force an increase in cotton production with a law that obligated all municipalities with the proper climate and soil to plant cotton.[121] This attempt to force diversification failed because the government did not invest in crop research and extension work, leaving farmers to bear the costs of crop experimentation.

More than a decade after the 1897 crash, the government had only taken symbolic steps to encourage diversification. Although some large landowners dabbled with alternative crops, most established plantations were hesitant to diversify as long as coffee continued to offer large returns. Notwithstanding cyclical dips in production caused by global conflict and economic downturns, Guatemalan coffee exports grew steadily throughout the early 20th century. True diversification was unlikely to occur organically and required robust state support—price controls, experimentation and incentives—that the Guatemalan government did not offer. Instead, the government tried to artificially diversify the economy by offering foreign companies like the United Fruit Company generous concessions.

During the first half of the twentieth century, the United Fruit Company (UFCo) exercised tremendous influence over the Guatemalan government and the economy. In a misguided effort to help Guatemala recover from the 1897 crash, President Estrada Cabrera surrendered control in major economic sectors—railroads, ports, power, and agriculture—to American companies.[122] Between 1902 and 1908, he awarded 139,500 hectares of land to the United Fruit Company (UFCo) and its sister company the International Railways of Central America (IRCA).[123] The government gave the UFCo a monopoly over rail transportation and

[121] Manuel Rubio Sánchez, "El Cultivo del Algodon A Través de Nuestra Historia," *El Imparcial*, February 15, 1955.
[122] Estrada Cabrera also benefited personally from these transactions. Paul Dosal, *Doing Business with the Dictators: A Political History of United Fruit in Guatemala, 1899-1944* (Wilmington, DE: Scholarly Resources, Inc., 1993), 38-39, 70.
[123] Technically the railways were owned and operated by the International Railways of Central America, but Minor Keith was a key IRCA investor and an executive in the UFCO. Paul Dosal, *Doing Business with the Dictators*, 46-47, 62, 78. Paul Dosal, *Power in Transition: The Rise of Guatemala's Industrial Oligarchy, 1871-1994* (Westport, Connecticut: Praeger, 1995), 42-43.

control over Guatemala's major port, Puerto Barrios. The UFCo was also granted generous rights to divert rivers and streams for irrigation projects. Even where legal regulations existed to protect watersheds, the government changed the law to benefit the UFCo.[124] These concessions were controversial and landowners, government officials, and workers contested Guatemala's transformation into a banana republic.[125]

"The Machine"

The United Fruit Company had many political opponents, but even critics lauded the UFCo's ability to transform the hot and humid lowlands into productive spaces. Influential promoters crafted the image of the UFCo as leading the vanguard of modernization. In 1914, UFCo promoter Frederick Upham Adams argued that the banana was created by "the Machine": a fusion of global commerce and industrial agriculture that linked American cities with the tropics.[126] He lauded the Americans who transformed the deadly swamps of Central America into gardens for the world, driven by the "instinctive spirit…to face and conquer the frontier."[127] Promoters like Adams established a strong narrative about the UFCo as a transformative force that brought agricultural modernization to formerly peripheral regions. He argued that the conquest of the tropics transformed global food production that enabled the world to feed "the ever-increasing hunger of the city-housed multitudes" with cheap and nutritious tropical produce.[128]

The UFCo provided Guatemalan planners with a template for modernization that that embraced the ability of engineers and planners to organize nature into large, well-capitalized plantations. Observers were often impressed by the disjuncture between a chaotic nature and the carefully planned banana fields. In the 1920s, American Frank Carpenter claimed that no other

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[124] The Company cleared land on the margins of the Motagua River in Izabal in violation of an 1894 law. The situation was regularized in 1925 when the UFCo was given control of land on the Motagua River for 25 years, although municipalities complained about the concession. This concession also came at the height of the UFCo's battle with Cuyamel Banana Company for control of the Motagua River. Martinez Muñoz et. al., 377; Dosal, *Doing Business with the Dictators,* 146-148.

[125] The term 'banana republic' was coined by O. Henry (a pseudonym for American writer William Sydney Porter). His short stories satirized life in Honduras where the Cuyamel Banana Company, run by Samuel Zemarray, exerted tremendous influence over the republic. The region was never explicitly named. O. Henry, *Of Cabbages and Kings* (New York City: Doubleday, Page, & Company, 1904), 132, 296.

[126] Frederick Upham Adams, *Conquest of the Tropics: The Story of the Creative Enterprises Conducted by the United Fruit Company* (Garden City, New York: Doubleday, Page & Company, 1914), 15-16.

[127] Ibid., 49-53.

[128] He also defended the UFCo from criticism about wages, claiming that the region needed more companies "that are able and willing to 'exploit' her natives by paying them eleven or more times the prevailing legal rates of wages." Adams, *Conquest of the Tropics*, 203, 355-356.

country could rival the productivity of the UFCo's plantations in Izabal's Motagua Valley.[129] This productivity, however, was not sustainable. The UFCo maintained artificially high yields by opening new land and investing heavily in irrigation, fertilizers, and pesticides.[130] In his examination of banana production in Honduras, John Soluri argued that "[i]ntensification is often equated with 'modernization,'" despite evidence that "boosting yields extracts enormous environmental, economic and social costs."[131]

The rapid expansion of bananas and other exports across Latin America was facilitated by the expansion of rail lines and other transportation infrastructure. This enabled plantations to rapidly colonize "virgin territories."[132] Though yields were initially high, overextension and mismanagement of the stored soil nutrients led to declining yields. Pests and pathogens flourished on large plantations that specialized in a few exports. Stuart McCook argues that epidemic plant diseases like coffee rust, sugar mosaic and sigatoka disease became more prevalent as export agriculture expanded and intensified throughout the 19th and 20th century in Latin America. Where land was abundant, planters could defer the environmental costs of production by constantly opening up new land, but this was a short term solution that most landowners could not sustain. Once the frontier was exhausted, large landowners and the state invested heavily in scientific interventions to maintain high yields.[133] Planters, however, often viewed cyclical fluctuations in production caused by disease and falling soil fertility as "technical problems of production rather than as structural problems with the underlying

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[129] Ingrid Yulisa Castañeda, "Dismantling the Enclave: Land, Labor, and National Belonging on Guatemala's Caribbean Coast, 1904-1954," (PhD dissertation, Yale University, 2014): 30.

[130] Stephen Kent O'Brien contends that the UFCO's successful use of "chemicals to fend off the various menaces of nature," was emulated by Guatemalans. However, criticism of the UFCo eventually extended to its production practices and modernizers tried to emulate aspects of the industrial production model but not the whole. Stephen Kent O'Brien, "On Perilous Ground: A Social and Environmental History of Escuintla on Guatemala's Pacific Coast," PhD Dissertation, Yale University (2007): 103, 159.

[131] John Soluri, *Banana Cultures: Agriculture, Consumption, and Environmental Change in Honduras and the United States*, (Austin: University of Texas Press, 2005), 239.

[132] Reinaldo Funes Monzote, *From Rainforest to Cane Field in Cuba: An Environmental History Since 1492,* trans. Alex Martin, (Chapel Hill: University of North Carolina Press, 2008), 126, 134.

[133] For collapse of wheat production in California and its replacement by a new agro-ecosystem see Steven Stoll, *The Fruits of Natural Advantage: Making the Industrial Countryside in California*, (Berkeley: University of California Press, 1998). For flagging agricultural productivity on the Great Plains after an initial boom and efforts to maintain fertility see Geoff Cunfer. *On the Great Plains: Agriculture and Environment*. College Station: Texas A & M Univ. Press, 2005. For comparative approach see Geoff Cunfer and Fridolin Krausmann, "Sustaining Agricultural Systems in the Old and New Worlds: A Long-Term Socio-Ecological Comparison," in *Long Term Socio-Ecological Research: Studies in Society-Nature Interactions Across Spatial and Temporal Scales*, eds. Simron Singh, Helmut Haberl, Martin Schmid, Michael Mirtl, and Marian Chertow (Berlin: Springer, 2013), 269-296.

model."[134] Latin American plantation operators tried to compensate for rising costs by reducing labour costs. They did so by mechanizing plantations and suppressing organized labour to keep wages low.[135]

Though banana plantations were celebrated as a model of modernization throughout the early 20th century, they were designed to be ephemeral and transitory.[136] In the 1920s, the UFCo moved to acquire new land on the Pacific Coast. This largely undeveloped frontier had rich soils and was well-situated to export crops to US markets on the West Coast. The Company's lobbying efforts coincided with a moment of a democratic opening following the end of the Estrada Cabrera regime.[137] In 1927, Guatemala's major newspapers and the Asociación General de Agricultores—a powerful landowner's organization—launched a campaign against the UFCo. They worried that the United Fruit Company would drive independent banana producers out of business.[138] More broadly, they objected to the UFCo's huge demand for labour which was tantamount to a "'coup de grace to the nation's agriculture.'"[139] The UFCo was undaunted and pressed the sympathetic government of Lazaro Chacón (1926-1930) to push through new concessions that would also secure its control over the Pacific Coast, including exclusive control of a new port. Despite growing public anger about government corruption, the President made several unsuccessful attempts to get concessions for the UFCo through Congress. Chacón persisted until 1930, when he was forced to resign the Presidency following a stroke.[140]

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[134] McCook, *States of Nature*, 9, 22, 60, 78. Also, Lawrence S. Grossman, *The Political Ecology of Bananas: Peasants, Contract Farming, and Agrarian Change in the Eastern Caribbean* (Chapel Hill: University of North Carolina Press, 1998).

[135] For a nuanced discussion of the UFCO's transition between different labor models as an attempt to control financial costs and mitigate environmental risks of banana production in Ecuador, Steve Striffler, *In the Shadows of State and Capital: The United Fruit Company, Popular Struggle, and Agrarian Restructuring in Ecuador, 1900-1995*, (Duke University Press: Durham and London: 2002), 194-196.

[136] McCook argues that the success of a commodity was dependent on the local environment, global markets and labor. Even if all of these factors were favorable, establishing a new commodity was difficult and required "constant innovation…to increase or even sustain" production." Stuart McCook, "Ephemeral Plantations: The Rise and Fall of Liberian Coffee, 1870-1900," *Comparing Apples, Oranges, and Cotton: Environmental Histories of the Global Plantation*, ed. Frank Uekötter (Frankfurt am Main: Campus Verlag, 2014), 86; Steve Marquardt, "'Green Havoc': Panama Disease, Environmental Change, and Labor Process in the Central American Banana Industry," *The American Historical Review* 106, no. 1 (2001): 50.

[137] Dosal, *Doing Business with the Dictators*, 96-97, 107.

[138] Though small banana growers initially believed the UFCo's presence would help their business, they quickly began to resent the Company because it used its control of land and the railroads to force growers to accept low prices on bunches. Ingrid Yulisa Castañeda, "Dismantling the Enclave," 34.

[139] Handy, "Enfrentándose al Pulpo," 26. The AGA opposed the monopoly that IRCA, and by extension the UFCO, had over railways. Dosal, *Doing Business with the Dictators*, 99.

[140] Handy, "Enfrentándose al Pulpo," 19-20, 24-25; Dosal, *Doing Business with the Dictators*, 161-176.

After Jorge Ubico was elected in 1931, the charismatic President ended the political freedoms that had briefly flourished in the 1920s. He imposed order on the Guatemalan economy and countryside, purging the government and eliminating officials suspected of corruption or liable to dissent. The legislature was also transformed into an arm of the executive and Ubico pushed through the UFCO contracts, claiming that he had secured better terms than Chacón.[141] Concessions to the UFCo did not succeed in greatly diversifying Guatemala's agrarian production, rather they fostered increased dependency on export agriculture as mode of economic development.[142] Guatemala's chosen path for economic development was shared by many Latin American countries that exported primary products to industrial countries like the United States, Germany, France and Great Britain.[143] Although the government made half-hearted efforts to diversify after the 1898 crash, Guatemala's economic fortunes were still heavily dependent on coffee.

When the Great Depression hit, world coffee prices dropped precipitously from $0.22 to just $0.08 cents per pound.[144] In Guatemala the value of exports collapsed almost 40% between 1928 and 1932, and government spending fell by half during the same period.[145] Victor Bulmer Thomas argues that Guatemala was one of the few countries where economic policy, including promotion of traditional exports and import substitution, allowed for a quick economic recovery. Where larger countries like Mexico and Brazil relied heavily in import substitution industrialization, Guatemala and countries along the Caribbean trended toward import substitution agriculture. Across Central America and the Caribbean, enclaves specializing in export food production—like the UFCo banana plantations—created a large internal market for domestic agriculture.

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[141] Dosal, *Doing Business with the Dictators*, 178.
[142] Taxes on bananas were roughly $60,000 compared to $2,000,000 for coffee in 1928. Ibid., 174.
[143] Victor Bulmer Thomas, *The Economic History of Latin America Since Independence*, (Cambridge: Cambridge University Press, 2014), 195.
[144] V.D. Wickizer, *The World Coffee Economy With Special Reference to Control Schemes* (Stanford: Food Research Institute, Stanford University, 1943), 49-50; Jeffrey L. Gould, "Indigenista Dictators and the Problematic Origins of Democracy in Central America," *The Great Depression in Latin America*, eds. Paulo Drinot and Alan Knight (Durham: Duke University Press, 2014), 188.
[145] The volume of exports also dropped across Latin America, although the drop was more modest in Central America because agricultural goods still had to be produced for market. Countries reliant on mining, like Peru or Mexico found their exports dropped precipitously as existing stockpiles were depleted. See Victor Bulmer Thomas, *The Economic History of Latin America Since Independence*, 195.

Throughout his fourteen-year dictatorship, President Ubico tried to improve corn production so that more campesinos could leave their small farms and work on large plantations.[146] Ubico initially took steps that seemed to favor campesinos, including allowing uncultivated land to be rented in usufruct and repealing debt peonage in 1934. These initiatives put more land into production and ended unpopular labour practices, allowing him to cultivate a reputation as a strong President who stimulated the economy and imposed order on the countryside.[147] However, many of Ubico's policies had adverse consequences for campesinos. Debt peonage was replaced by a more complicated set of vagrancy laws that compelled poor campesinos with little to no land to work for at least 100 days. Though some campesinos preferred this system because they could choose their employer, it was still fundamentally coercive and enabled the state to strengthen its authority over the countryside.[148] In 1936, the government reversed regulations that allowed campesinos to rent uncultivated land and instead encouraged their sale to large landowners.[149] Endemic land shortages coupled with the vagrancy laws meant that many campesinos had to either seek work outside of their communities or they were drafted by the state to work on infrastructure projects.

The Ubico administration used vagrancy laws to compel landless labourers to build an extensive network of new roads, linking the subsistence-oriented Highlands to export regions like the Pacific Coast.[150] This integration created a significant boost for domestic-use agriculture because the roads enabled campesinos to access urban markets and the coastal plantations.[151] In the late 1930s, the President tried to facilitate this increase by ordering Guatemalans to plant corn on *ejidos* and national land across the republic. The state eagerly claimed credit for the near doubling in corn production between 1936 and 1937, but this miracle was only partly due to Ubico's agricultural policy. The most important factors boosting production were improvements

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[146] Kenneth J. Grieb, *Guatemalan Caudillo, the Regime of Jorge Ubico: Guatemala, 1931-1944*, (Athens: Ohio University Press, 1979), 143.
[147] For Kaqchikel memories about the Ubico period see David Carey, *Our Elders Teach Us: Maya-Kaqchikel Perspectives* (Tuscalooosa: University of Alabama Press, 2001), 204-205.
[148] Carey, 205; Gleijesis, *Shattered Hope* 13-14. For less positive memories of the Ubico period and a description of oppressive labor conditions see Forster, *The Time of Freedom*, 29-31.
[149] Martinez Muñoz et. al., "Agricultura," 367.
[150] Martinez Muñoz et. al., "Agricultura," 367.
[151] Grieb, *Guatemalan Caudillo*, 152; Victor Bulmer Thomas, *The Economic History of Latin America Since Independence*, 229-230. Gould, *To Die in This Way*, 204; Also David McCreery, "Wage Labor, free Labor, and Vagrancy Laws: The Transition to Capitalism in Guatemala, 1920-1945," in *Coffee, Society and Power in Latin America*, ed. William Roseberry, Lowell Gudmundson and Mario Samper (Baltimore: Johns Hopkins University Press, 1995), 223.

in statistical techniques and the proliferation of roads that enabled remote regions to participate more easily in the market.[152]

Ubico's emphasis on increasing production did not deal with chronic supply problems that disproportionately affected small producers. In good years corn prices were depressed by oversupply, but in bad years weather and pests could cause precipitous price increases. For example, in 1937 a drought coupled with the invasion of grasshoppers and white worm dramatically reduced crop and seed yields across the country. The shortages encouraged speculation and inflation in corn prices. This supply problem could be solved, but it required a large infrastructure investment in grain storage that the Ubico government did not pursue. As a result, grain prices and supply continued to shift unpredictably throughout the 1930s and 1940s. Guatemala's corn problems were worsened by the increased dependence of campesinos on seasonal plantation labour. Near the end of the decade, the Governor of Chimaltenango observed that most campesinos travelled to work on coastal plantations during the harvest and he anticipated low corn yields as a result.[153]

Ubico's focus on import substitution agriculture compounded the problematic divergence of Guatemalan agriculture into subsistence-oriented production in the highlands and export-led development on the coast. A 1934 report on wheat production justified this division by insisting that campesinos did not rotate their crops or apply fertilizers, despite official efforts to promote modern techniques. The government praised large landowners because they secured "magnificent results" by preparing the land, using machinery and importing wheat. They did not mention how inequality and limited access to land artificially constrained campesino productivity, but instead focused on the fecundity of the coastal frontier. The *Revista Agricola* punctuated their argument with photos of modern plantations growing wheat in the low-lying areas of Suchitepéquez. They wrote enthusiastically that the spread of wheat to the coast could "open a new era for agriculture in Guatemala" because there was an abundance of underutilized land.[154] The Ubico administration eagerly produced guides promoting potential crops that could be grown in this new frontier, but they leaned on large landowners to drive modernization. There

[152] Grieb, *Guatemalan Caudillo*, 143-144, 154.
[153] Carey, *Our Elders Teach Us*, 87-88.
[154] Molino Belén de Sololá imported wheat from Canada. "Las Siembras de Trigo en Guatemala," *Revista Agricola*, Vol XII: 2 (1934), 89.

were relatively few agricultural agents to demonstrate new techniques, large machinery was in short supply and modernization efforts focused almost exclusively on large plantations.[155]

The Ministry of Agriculture was quick to refute any perceived slight concerning the productivity of Guatemalan agriculture. In 1933, the *Revista Agricola,* the official organ of the Ministry of Agriculture, published an extended rebuttal of an unnamed young agronomist who dismissed Guatemalan agriculture as "incipient." The *Revista*'s editors offered an extensive list of the crops produced in Guatemala and emphasized new initiatives to train indigenous labourers to drive and maintain tractors, despite their lack of "scientific reasoning." They also recognized that the indigenous population produced the country's main domestic staple, but they made no mention of the quantity or quality of corn production. These weak efforts to defend agricultural productivity under Ubico reflected the state's precarious dependency on coffee and bananas. The existence of new commodities in Guatemala was not synonymous—no matter how much the government cared to believe—with their effective or efficient production.[156]

Field reports published in the *Revista Agricola* blamed the failure of previous diversification efforts on farmers and campesinos. In March 1934, agricultural inspector Juan Antonio Alvarado found that once extensive cinchona plantations across the Pacific Coast had suffered "criminal devastation," which he attributed to planter preference for coffee and excessive bark harvesting by campesinos.[157] In the late 19th century, President Justo Rufino Barrios (1873-1885) had mandated that cinchona trees be planted so that Guatemala could tap into the surging global demand for quinine, a derivative of cinchona bark.[158] Unfortunately, the government distributed *Cinchona succiruba* and not *Cinchona ledgeriana*, which was preferred for the higher percentages of quinine in the bark. By the 1930s, cinchona cultivation had fallen out of favor and formerly extensive plantations were in disarray. On the Finca Mercedes in Coatepeque, Quetzaltenango, little remained of the nearly 5,000 trees planted during the Rufino Barrios era and the owner told Alvarado that he was inclined to destroy his cinchona trees

[155] Grieb, 143.
[156] "La Agricultura en Guatemala," *Revista Agrícola*, Vol XI: 1 (1933).
[157] This use of bark suggests that campesinos were at heightened risk of malaria and attempted to treat their illness by taking what they needed from plantations. Cindy Forster notes that the criminalization of theft from plantations was heightened during the Ubico period but prosecution of these "crimes of poverty" fell off during the Revolutionary period. Forster, *The Time of Freedom*, 63.
[158] For more about the history of cinchona, see Kavita Philip, "Imperial Science Rescues a Tree: Global Botanic Networks, Local Knowledge and the Transcontinental Transplantation of Cinchona," *Environment and History* 1 (June 1995): 173–200.

because they were poor shade trees for coffee. The lone exception to this trend of decay was the Finca San Pablo, where careful management had kept cinchona trees much more productive than the regional norm. [159] Though the Ministry of Agriculture was eager to shift responsibility onto producers, the collapse of cinchona production was caused by a combination of market conditions, poor state planning and weak technical support for new exports.

Guatemala's agricultural sector began to recover from the Depression in the mid-1930s and the Ministry of Agriculture escalated its efforts to foster diversification. The failure of cinchona encouraged the Ministry of Agriculture to focus its diversification efforts outside of area dominated by coffee production. Very few crops competed effectively against coffee in its ecoregion, with the exception of rubber, which was grown on large, well-capitalized plantations and supported by the US demand for strategic resources during WWII.[160] The government engaged in an education campaign that emphasized the untapped agricultural potential of the South Coast, publishing instructional guides that promoted a range of potential exports including sugar, cacao and cotton production.[161] The Ministry believed that cacao, for example, could become a national drink of choice given its popularity with indigenous communities.[162] Yet it was cotton that emerged again as an ideal crop for the Pacific Coast, promising large landowners high returns and minimal start-up time,

Early cultivation guides for cotton emphasized the similarities between it and corn, indicating that the Ubico government wanted to engage small and medium farmers in export production. A 1932 report urged farmers to devote part of their cropland to cotton because "man cannot live on bread alone."[163] By 1937, the Ministry of Agriculture described cultivation in Suchitepéquez, Retalhuleu, and Alta Verapaz as "limited" and they emphasized the need to "intensify" production. With notable frustration, they commented that their efforts to encourage

[159] "Buscando Semillas de Quina: Informe del Inspector Agricultura," *Revista Agricola*, Vol XII: 2 (1934): 263-264.
[160] Grieb, 261-262.
[161] See Pastor Ospina, *Breve Instrucción para el Cultivo del Algodón en Centro América* (Guatemala: Imprenta de la Paz, 1864). For others see José Carrera G., *Como Propagar Rapidamente la Caña de Azucar* (Guatemala, C.A.: Tipografía Nacional, 1941). Biblioteca AGCA, Reg. 235; Dirección General de Agricultura, *El Regadio de la Caña de Azucar*, 3rd ed. (Guatemala, C.A.: Tipografía Nacional, 1940). Biblioteca AGCA, Reg. 331.; Adolfo Almengor A., *El Cultivo del Cacao en Suchitepéquez*, (Guatemala, C.A.: Tipografía Nacional, 1940), Biblioteca AGCA, Reg. 0318.
[162] *Memoria de las Labores del Ejecutivo en el Ramo de Agricultura: 1937* (Guatemala, C.A.: Tipografía Nacional, 1938), 25.
[163] Dirección General de Agricultura, *Instruciones Para La Siembra y Cultivo de Algodón* (Guatemala, C.A: Tipografía Nacional, 1932), 3.

cultivation practices that discouraged the emergence of diseases had met with limited success. The Ministry rejected traditional intercropping strategies used by indigenous farmers and instructed farmers to plant on alternate years and burn the crop remnants after the harvest.[164] To facilitate the spread of cotton along the South Coast, the Ministry also supported small producers with fertilizers and insecticides and they imported quality seed from El Salvador where cotton cultivation was more established.[165] These initiatives successfully increased cotton production and the area under cultivation grew dramatically between 1936-37 and 1942-43, from 384 manzanas to over 4,000 manzanas.[166]

Although cotton production expanded rapidly during the Ubico period, the amount of land under cultivation was insignificant compared to coffee. In a market dominated by coffee growers, cotton and other new commodities were unlikely to succeed unless the government incubated the industry by researching ideal varietals, identifying best practices for growth and offering some financial protections. Guatemalan landowners were unwilling to dedicate their plantations to cotton, because its value remained unproven and there was reasonable apprehension about the economic risk posed by boll weevil and other pests. In 1937, the Ministry of Agriculture announced the need for government to set up experimental farms, so that they could impress upon landowners the economic value and productivity of modern cultivation techniques and new crops. "Our farmer," they observed, "is timid as regards all those plantations which are not coffee and for this reason we have sufficient necessity for experimental farms, the basis for agricultural development." [167]

The agricultural legacy of the Ubico-era was mixed. Kenneth Grieb argues that the Ubico government implemented a sweeping economic modernization program that transformed Guatemala for generations. His government successfully expanded roads, which increased the trade and the flow of labour between Guatemala's export zones and the interior regions dominated by subsistence agriculture. The final years of Ubico's dictatorship were marked by economic growth and a surge in exports.[168] More broadly, he expanded the role of the state and

[164] On 'off years', the Ministry urged that a handful of cotton plants be planted as traps for remnant insects, which could be destroyed. *Memoria de las Labores del Ejecutivo en el Ramo de Agricultura: 1937*, (Guatemala: Noviembre, 1938), 25, 379.
[165] Ibid., 379.
[166] Grieb, 160.
[167] *Memoria de las Labores del Ejecutivo en el Ramo de Agricultura: 1937*, 379. See also Manuel Rubio Sánchez, 'El Cultivo del Algodon A Traves de Nuestra Historia,' *El Imparcial* 15 February, 1955.
[168] Grieb, 161.

encouraged the development of a new middle class constituted of managers, bureaucrats and technicians. Many of these new professionals subsequently turned against Ubico, demanding more freedoms and greater social equality.[169]

Modernization initiatives were discussed by agronomists and policymakers, but they were implemented piecemeal and agricultural growth continued to depend on the innate fertility of Guatemala's soils and the labour power of indigenous labourers. This policy was especially evident in the Northern Lowlands around Cobán, where the soils were objectively worse than on the Pacific Coast but coffee planters remained relatively competitive. When Higbee asked about this dynamic, a local elite told him bluntly that it was "[n]ot the soil but rather the low wages of our labourers [that] are the wealth of the Cobán…[w]ithout them we could not exist."[170] Many landowners neglected new technologies and crops because they could artificially increase margins by exploiting cheap labour. The Ubico administration's measures increasing corn production reinforced the dominance of export agriculture: landowners could pay low wages if corn prices remained stable and campesinos were less able to avoid wage labour if the returns they could get on their corn was low.

During the Ubico period, modernization and diversification remained limited to a handful of large, well-capitalized plantations that experimented with new crops as a hedge against future coffee crashes. Although the administration encouraged greater corn production, the state did not invest heavily in crop experimentation or extension work that might have enabled campesinos to increase their yields and reduce their reliance on the plantations. The export wealth generated during the Ubico period enriched a small, economic elite while the majority of Guatemalans coped with increased poverty and food insecurity. Campesinos who lived during Ubico's dictatorship told historian Cindy Forster that constant hunger drove them to work on plantations under conditions that approached slavery.[171] The Ubico administration's rhetoric of productivity in the land of eternal spring described a reality that only a small elite enjoyed.

"Emerald Fields"

On the eve of the Revolution, modernizers from across the political spectrum believed that agriculture was in decline, but they did not agree on the causes and potential solutions for

[169] Jim Handy, *Gift of the Devil: A History of Guatemala* (Boston, Massachusets: South End Press, 1984), 104; Grieb, 283.
[170] Higbee, "The Agricultural Regions of Guatemala," 190; Handy, *Revolution in the Countryside*, 10.
[171] Forster, *The Time of Freedom*, 32-33.

this perceived deterioration. In 1945, Atherton Lee, an agronomist for the UFCo, offered an influential analysis of the issues facing Guatemalan agriculture.[172] Lee used corn yields as a barometer of agricultural problems. In 1936, Guatemala had an average yield of fourteen bushels per acre. This compared well to Mexico, where the average was eight bushels, but it was much lower than the nearly sixty bushels per acre achieved in Iowa. Those high yields were achieved through corn hybridization programs, mechanization and intensive fertilization: all practices uncommon in Guatemala.[173] Lee argued that the high cost of Guatemalan corn was troubling in a country where 73% of the population subsisted on a diet of corn and beans. Many campesinos could not afford meat or even fruit.[174] Lee argued that Guatemala's production problems could be solved by colonizing the Pacific Coast and the Petén. This would reduce population pressure in the Highlands and create new economic opportunities for large landowners. "In this era of civil engineering," wrote Lee, "[we] can make available hundreds of thousands of these rich lands for the descendants of the Maya now crowded on the infertile mountainous highlands."[175]

Surveying the export sector, Atherton Lee argued that Central America's competitive advantage—proximity to the United States, soil fertility, and cheap labour—was undermined by the failure to adopt new production techniques like mechanization and fertilizers. He contended that agricultural knowledge in the tropical Americas was 20 to 50 years behind Java and other former colonies in South East Asia.[176] Lee encouraged the government to expand aggressively into the Pacific Coast, using experimental farms to disseminate seeds to farmers and propagate new production techniques. In conjunction with her fertile soils, Lee argued that Guatemala's cheap labour gave it a special edge in economic competition with Asian countries. "Guatemala," opined Lee, "…has the best opportunity to compete with the low wage scales of Eastern

[172] Lee was also Director of a USDA experimental research station in Puerto Rico and wrote an analysis of strategic materials available in the Western Hemisphere in 1944. Atherton Lee, "Strategic Materials Needed in the Western Hemisphere," *Publicaciones del Comité Permanente de la Segunda Conferencia Interamericana de Agricultura* (Mexico, D.F: 1944).

[173] For more on this process, see Deborah Fitzgerald, *Every Farm a Factory: The Industrial Ideal in American Agriculture*, (New Have: Yale University Press, 2003).

[174] A single orange cost 5 to 10% of a worker's salary in Guatemala, compared to 1% in the U.S. Atherton Lee to E.J. Kyle, "Sugestiones Para la Agricultura en Guatemala," October 10, 1945, p. 34. Min. Ag. 421. AGCA. Guatemala, C.A.

[175] Lee argued that pesticides could control endemic tropical diseases like malaria, while cinchona plantations still producing in Alta Verapaz could increase production to supply cheap anti-malaria medication for Central America. Atherton Lee to E.J. Kyle, "Appendix I: United Fruit Company, Departamento de nuevos cultivos," Octubre 7, 1945, p. 68. Min. Ag. 421. AGCA. Guatemala, C.A.

[176] U.S. Atherton Lee to E.J. Kyle, "Sugestiones Para la Agricultura en Guatemala," October 10, 1945, p. 38. Min. Ag. 421. AGCA. Guatemala, C.A.

countries. We are liberals and want to improve the 'standards' of living of the people of Central America."[177] He encouraged the state to invest in corn hybridization and create varieties that thrived on large, coastal plantations, where easy mechanization, soil fertility and climate allowed for multiple large harvests per year.[178] If food was plentiful, reasoned Lee, wages could be kept low and labourers would be healthier and more productive. Lee's report appealed primarily to large landowners and conservatives who wanted to increase agricultural production without altering land tenure or class relations.

Leopold Zeissig, a representative of the Department of Rural Economy, and Argentinian Engineer Ángel Núñez Aguilar criticized Atherton Lee's diagnosis in their book, *Guatemala: Paraíso Perdido*. They agreed with Lee concerning some of the fundamental problems facing Guatemala, including soil erosion and deforestation. However, they cautioned that Lee's analysis unduly shifted blame for Guatemala's agricultural problems onto the Maya. Zeissig and Núñez Aguilar argued that inequality created the country's agricultural problems. This began in the colonial era when a small clique of Spanish landowners used cheap labour and fertile soils to enrich themselves at the expense of the indigenous majority.[179] They argued that the exclusion of the Maya from the nation was the "gravest error of our history." As a result, Guatemala's "emerald fields" were underutilized by "intelligent and vigorous" Mayans who struggled against nature and neglect to produce food. They believed that desperate campesinos unintentionally caused deforestation and soil erosion as they cleared new land and intensified production on existing plots.[180]

At the beginning of the Revolution, reformers sought to ameliorate social inequality and pass rural land and labour reforms for the benefit of indigenous campesinos. Zeissig and Núñez Aguilar argued that Guatemala's agricultural decline and food production problems could be reversed if technicians introduced campesinos to new technologies and techniques. "Our place," they argued, "is at the side of the Indian, in front of our fertile fields."[181] They called for every

[177] Ibid., 64.
[178] Ibid., 18.
[179] Zeissig wrote that the indigenous population was either exploited or left behind by ladinos and without reforms "[Pedro de] Alvardo's selfishness will live for a long time." This was a reference to the infamous cruelty of Guatemala's conquistador and first Governor. Leopoldo Zeissig, *Guatemala, Paraíso Perdido*. (Guatemala: Imprenta Hispania, 1946), 6.
[180] Zeissig, 22.
[181] Ibid., 6.

mayor to be trained as an agronomist so that government could be more active in local affairs, unlike the Ubico era when many bureaucrats were patronage appointments.[182] This was a definitive step-forward in the relationship between the state and rural poor, although progressive modernizers continued to dream up schemes for agrarian modernization without consulting affected communities. Zeissig and Núñez Aguilar were proponents of large-scale agrarian production and wanted campesinos to become market farmers. Campesinos, however, surprised reformers by engaging in rural modernization projects, agitating for better access to new agricultural technologies and pushing for structural reforms that slowly radicalized the government's rural development plans.

There was also a nascent but growing concern that the model of industrial agriculture popularized by the United Fruit Company was irredeemably flawed. Guatemalan writers like Miguel Angel Asturias captured this dilemma in his novel *The Strong Wind*, which harshly criticized the UFCo's Pacific Coast operations. Set amidst the verdant jungle, Asturias' banana stands were modern, mechanical marvels that thrived by consuming labourers and new land. The opening passage described the end of the initial conquest of the Pacific Coast: workers and machines had rerouted rivers and opened up new roads that "carried men and crops, hunger and food" into this new frontier. The company, wrote Asturias, erected plantations on the remains of the verdant jungle: a "poor fabulous beast, tamed, demeaned, but still alive."[183]

There was a lingering horror about the act of coastal colonization described in the novel: it promised modern productivity but claimed lives and drove people mad. The plantation overseer Adelaido Lucero described the plantation as "'[a] land that swallows people up.'" There was a constant demand for labourers, coordinated by the telegraph fulfilled by trains that carried already tired bodies to the coast.[184] Lucero also noted that the orderly plantation—"so much alike and so symmetrically planted that they looked like the same plant"—was bewildering in its uniformity and often disoriented newcomers. Even the administrators who worshipped the power of the fruit company, wondered about the loss of humanity that accompanied this new model of organizing land and labour. The American John Pyle told his wife that once the frontier had been conquered, the adventurers were replaced by the lifeless organizers, "the ones who aren't good or

[182] Ibid., 77-78.
[183] Miguel Angel Asturias, *Strong Wind* (New York: Dell, 1975), 1.
[184] Ibid., 21.

bad, happy or sad, just machines."[185] Critics like Asturias worried that the high productivity observed on plantations destroyed land and communities without contributing to national development.[186]

Conclusion

At the beginning of the Revolution, policymakers, landowners and technicians broadly agreed that agriculture needed to be modernized: tropical nature needed to be made productive with an infusion of technology, capital, and expert knowledge. Modernizers were inspired by the United Fruit Company depicted by Adams, who argued that the "Machine" transformed Guatemala's formerly pestilent peripheries into islands of modernity. This idealized history of the UFCo ignored the political, labour and environment problems that dogged UFCo plantations on the Atlantic and Pacific Coast. These were problems that were common to most large plantations, but they were magnified in the carefully engineered farms run by the UFCo. Many critics who favored modernization struggled to reconcile their opposition to export-led development with their admiration of the UFCo's innovative agricultural practices.

Guatemalans were divided between different approaches to agrarian modernization. Large landowners adopted a conservative interpretation of modernization. They argued that the state should limit itself to incremental financial reforms and new technologies that would boost productivity. They were inspired by the UFCo and the American-model of agricultural industrialization that used mechanization, hybridized seeds, fertilizers and pesticides to increase yields and reduce labour costs.[187] The second group agreed on the importance of new technologies but also called for sweeping land and labour reforms that would redistribute more wealth produced from Guatemalan soils to campesinos. These reformers emphasized the importance of agricultural extension and cultivated a powerful rhetoric that cast modernization as the solution to endemic rural poverty and a requirement for national sovereignty. These were the reformers who would eventually help create the legal and policy framework for Guatemala's agrarian reform in 1952.

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[185] Ibid., 24.

[186] This sentiment was shared by other North American thinkers who were concerned about the social and environmental consequences of industrial agriculture including Lewis Mumford *Technics and Civilization* (New York: Harcourt, Brace & Company, Inc., 1934) and Carl Sauer. See Stephen Marglin, "Farmers, Seedsmen, and Scientists: Systems of Agriculture and Systems of Knowledge," in *Decolonizing Knowledge: From Development to Dialogue*, eds, Frédérique Apffel-Marglin and Stephen A. Marglin (Oxford: Clarendon Press, 1996), 219.

[187] Deborah Fitzgerald, *Every Farm a Factory*, 5.

Chapter 2: Milpa, Deforestation and the Specter of Disaster

'Why my country is a New Atlantis. It is disappearing beneath the ocean.'

Anonymous Guatemalan, 1946[1]

Maize dominates the modern Guatemalan countryside, but it is especially prevalent throughout the highlands. Campesinos plant corn virtually anywhere they can and it is not uncommon to see fields of maize clinging tenaciously, impossibly, to the side of a steep slope or ravine. The modern geography of corn cultivation was partly created by centuries of exploitation by Guatemalan elites who seized the country's best land and limited indigenous communities to the highlands. However, the ubiquity of maize is also an indication of its cultural and spiritual importance for indigenous Guatemalans. Maize is an essential food—no meal is truly complete without a stack of tortillas or *tamalitos*—and it has sacred value because cultivating corn symbolizes the Mayan connection with the earth.[2] It was this spiritual dimension of maize production that vexed government officials who wanted to reform, modernize and systematize Guatemalan agriculture during the Revolution. Modernizers, who revered science, had trouble understanding that Mayan campesinos could simultaneously celebrate spirits in the natural world and be thoughtful and innovative farmers. Government efforts to reform maize production tried to turn the Maya into modern, market-oriented farmers. This ambition dovetailed with Arévalo's ideology of "spiritual socialism" that sought to "liberate men psychologically…[and] make each worker a man in the absolute fullness of his psychological and moral being."[3]

At the beginning of the Revolution, modernizers sought to turn the chaotic mess of corn varieties, crop rotations, and productive techniques into a category that could be governed and

[1] William Vogt, "A Continent Slides to Ruin," *Harper's Magazine*, Vol. 196: 1177 (1948), 489.
[2] Charles Wagley, "Economics of a Guatemala Village," *Memoirs of the American Anthropological Association* 43, no. 3 (1941): 31-44. For an updated perspective see John Watanabe, *Maya Saints & Soils in a Changing World* (Austin: University of Texas Press, 1992), 66.
[3] Arévao embraced "spiritual socialism" but this was a secular ideology that sought to reform society by transforming individuals. "Our socialism is going to liberate men psychologically…[t]o socialize a republic is not simply to exploit industries in cooperation with workers, but before this to make each worker a man in the absolute fullness of his psychological and moral being." Arévalo quoted in Handy, *Revolution in the Countryside*, 25. The Revolutionary state had strained relationships with the conservative leadership of the Catholic Church, although Arévalo collaborated with Protestant missionaries on more secular projects that advanced national ambitions. Virginia Garrard Burnett, "God and Revolution: Protestant Missions in Revolutionary Guatemala, 1944-1954," *The Americas* Vol. 46, No. 2 (Oct., 1989): 208, 212

controlled: milpa. As James Scott notes, modern states governed by simplifying the countryside into legible categories that served as "a convenient, if partly fictional, shorthand" that the state turned into an imperfect reality using laws and other methods of coercion.[4] Milpa is generally defined as corn interplanted with other companion crops, including beans that fixed nitrogen and squash that offered shade and naturally suppressed weeds. This crop complex was an iconic symbol of indigenous agriculture in the countryside, but policymakers were keen to replace it with new exports. Modernizers argued that milpa was wasteful and inefficient because indigenous campesinos worked land until it was exhausted and then abandoned it for new land that they cleared using fire. Most reformers could not readily conceive of the indigenous population as active and engaged participants in a larger modernization project. They ignored evidence from researchers who worked closely with communities and recognized campesinos as careful farmers with a keen sense of the crops and lands they cultivated.

Drawing on new technologies of surveillance—aerial photos, mapping, and census data—reformers argued that traditional maize production caused deforestation and soil erosion that heightened the risk of devastating landslides. In newspaper articles and advertisements, modernizers defined campesinos as ignorant agents of destruction. Experts promised that the Revolutionary state could use education to transform campesinos into productive citizens who were engaged in market-oriented production. The state also used the discourse of conservation as a pretext to shape agrarian relations along more economically productive lines, warning that inaction would lead to disaster. Modernizers used the threat of disaster as an opportunity to reform agriculture and systematize Guatemala's fractured agrarian landscape so that each region specialized in agricultural goods that suited local climate and soils. This approach to agriculture required considerable oversight and centralized planning, but experts promised that it would create a more resilient economy that respected the differences between agricultural regions. Policymakers confronted the limits of their agricultural knowledge in the Oriente, where plans to transform the Motagua Valley into a new commodity zone were scuttled by environmental limitations. The failure of this early modernization scheme demonstrated the importance of building relationships with communities and focused government attention on the Pacific Coast.

[4] James Scott, *Seeing Like a State*, 24.

Milpa Agriculture

The first full year of the Revolution was full of promise, anticipation, and planning for agrarian modernization that would transform the countryside. The editors of *Revista Agricola*, the Ministry of Agriculture's periodical, urged the government to invest in rapid modernization. They argued that new techniques would enable higher corn yields and stem the "terrible problem of scarcity" caused by inflation and food shortages.[5] The Directorate General of Statistics reported that prices for the thirteen major foods consumed in Guatemala had almost doubled since 1938.[6] Though there were different approaches to modernization, experts agreed that campesino agriculture constituted one of the main barriers to further development. Reformers argued that campesinos lacked the technical training to produce corn efficiently; yields were often low compared to modern varieties and over-cropping on marginal land caused soil erosion. Ideologically, reformers identified maize with the past and they believed its continued cultivation connoted an unnatural preoccupation with local needs and tradition at the expense of Guatemala's future. This section explores ideas about corn production that influenced agrarian modernizers during the Revolution and juxtaposes these with community-level studies that challenged negative stereotypes about indigenous milpa cultivation.

In the opening years of the Revolution, modernizers knew very little about the countryside they wanted to reform. Policymakers and agronomists based their early analysis of agricultural issues on a handful of reports produced by foreign observers. These reports fixated on campesinos as agents of environmental destruction, without taking into account the historical factors that precipitated the intensification of corn production throughout the highlands. In 1919, Orator F. Cook, an agronomist with the United States Department of Agriculture, documented the widespread practice of "milpa cultivation." He reductively described this as "the planting of crops in temporary clearings." Cook was an influential expert on tropical agriculture who had conducted extensive fieldwork in Latin America on a variety of crops, including rubber, cacao and cotton.[7] "[M]ilpa agriculture," observed Cook, "appears well adapted to the needs of very primitive peoples, since only a minimum of labor and equipment is required. The ax or the

[5] "Seccion Editorial: Terreno Abonado Para Obra Constructiva Agrícola," *Revista Agrícola*, February, 1945, 184.
[6] See table in Zeissig, *Paraiso Perdido*, 30.
[7] See chapter 1 for discussion of Cook's work on cotton and the Guatemalan kelep. Daniel W. Gade," The Contributions of O. F. Cook to Cultural Geography," *The Professional Geographer,* Vol. 22, No. 4, (1970), 206-209.

cutlass is the only tool that is required."[8] His observations about corn cultivation emphasized the immediate utility of swidden agriculture, but he implied that campesinos did not adapt their cultivation strategies to compensate for soil fertility, climate and population density.

Cook's work challenged the widespread belief that tropical soils were inexhaustible by focusing on the destructive potential of indigenous agriculture. He argued that indigenous peoples across Central America rejected European tools and crops in favor of primitive maize cultivation that relied on extensive deforestation. Campesinos used fire to rapidly clear land during the corn-planting season, but Cook argued that these fires often escaped their control and roamed "wherever there is fuel to carry them." Seen by night, the slopes of distant hills "gleam[ed] with lines of light like the streets of distant cities." Though this system was initially productive, repeated burning transformed once lush regions like the Valley of Salamá, in the Department of Baja Verapaz, into "artificial deserts cleared by human agency."[9] Cook's observations, couched in technical language, reinforced racial prejudices that denigrated the Maya as uninspired farmers occupying rich and fertile land that could be used for exports.

Cook's depiction of a destructive "milpa agriculture" also reflected growing international concern about the environmental costs of overpopulation in the developing world. He concluded that systems of agriculture that failed to maintain soil fertility were "nomadic and predatory" and would bring ruin to their practitioners.[10] He noted that the lack of virgin forest in Central America testified to previous occupation by indigenous inhabitants: "Nations may pass without history, and yet leave marks of their devastation."[11] Cook argued that the Maya had engineering

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[8] In a latter article, Cook noted the suitability of milpa agriculture for small populations and noted the near "obsession" of Northerners advocating tilling and modern crops. He encouraged instead a tree agriculture, emulating the cacao fields that once covered Guatemala's Pacific Coast. Orator F. Cook, "Milpa Agriculture, A Primitive Tropical System," *Annual Report of the Smithsonian Institution for 1919*, (Washington, D.C.: Smithsonian Institution, 1921), 308, 324-325.

[9] Cook qualified this finding by reminding readers that the use of burned fields for 1-2 years "appears very wasteful but has the advantage of making only small drafts on the fertility of the soil." Nevertheless, repeated burning changed the vegetation: forests gave way to bushes and finally tough grasses. Grasses dominated so long as humans continued to burn vegetation and inhibit regrowth. Yet the cutting of forests was connected to a decrease in rainfall, which when coupled with frequent use for agriculture or grazing encouraged desiccation of the land and erosion. O.F. Cook, "Vegetation Affected by Agriculture in Central America," *Department of Agriculture, Bureau of Plant Industry—Bulletin*, No. 145 (Washington, D.C.: Government Printing Office, 1909), 8, 10-12, 15-16.

[10] Cook, "Milpa Agriculture: A Primitive Tropical System," 326. Cook emphasized that deforestation and soil erosion led rapidly to chaos: "Civilization is at an end when an agricultural country ceases to be adapted to agriculture." Cook, "Vegetation Affected by Agriculture in Central America," 23.

[11] Ibid., 307. See William Denevan, "The Pristine Myth: The Landscape of the Americas in 1492," *Annals of the Association of American Geographers* (Washington, D.C.: Association of American Geographers) 82/3 (1992): 369–385.

their own collapse by overworking delicate tropical soils until they were exhausted.[12] However, he uncritically generalized his observations about milpa production in the Verapaces—a forested, lightly populated region where most soils could not sustain heavy cropping—without exploring how the Maya adapted their production techniques to different agro-ecological conditions.[13] In spite of its limitations, Cook's research on the Maya joined a wider scholarly literature that explored the links between deforestation, soil erosion and the collapse of civilizations.[14]

The link between overpopulation, poverty and environmental decay was popularized by William Vogt, Chief of the Conservation Section of the Pan American Union.[15] In 1945, Vogt published "Hunger at the Peace Table," in *The Saturday Evening Post*. The article called attention to soil erosion and overpopulation in Latin America; forces that threatened to undermine global peace and prosperity and throw the world back into war. Vogt hinged his story on the plight of Juan Pérez, a young Mexican forsaken by "modernity." Farming a slope with a 60% incline, Juan slowly lost the best topsoil to erosion and he was forced to abandon corn cultivation in favor of grazing goats. As the land produced less, Juan and his family pulled their belts tighter in an effort to forget their hunger. "[H]is babies," wrote Vogt, "who ought to be sleek and smiling, already betray their ecological—that is to say, environmental—kinship to the skinny dogs that one so often sees in that country." Vogt contended that without technical interventions and peasant education to stem erosion, the loss of soil fertility was sure to conclude in war and famine.[16]

In his bestseller *Road to Survival* (1948), Vogt argued that tropical deforestation was driven by cultural factors that could be remedied through education. He wrote that the region

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[12] Cook, "Milpa Agriculture: A Primitive Tropical System," 326.
[13] Charles Simmons commented that agricultural production in Alta Verapaz was essentially undeveloped and farmers still used methods dating to the Conquest to produce large quantities of corn. Charles Simmons, Jose Manuel Taranto T. and Jose Humberto Pino, *Clasificación de Reconocimiento de los Suelos de la República de Guatemala* (Guatemala: Instituto Agropecuaro Nacional, Servicio Cooperativo Inter-Americano de Agricultura and Ministerio de Agricultura, 1959), 487, 513.
[14] He followed in the footsteps of the American diplomat and historian George Perkins Marsh, who addressed the connection between soil fertility and civilization in his 1864 work *Man and Nature*. George P. Marsh, *Man and Nature* ed. David Lowenthal (Seattle: University of Washington Press, 2003).
[15] William Vogt's *Road to Survival*, (New York: William Sloan Associates, Inc., 1948) was the best-selling work on environmental issues until Rachel Carson's *Silent Spring* (1962) and was widely read in Latin America. Cushman notes the intellectual links between William Vogt and leading American environmentalist, Aldo Leopold. Gregory T. Cushman, *Guano and the Opening of the Pacific World: A Global Ecological History*, (Cambridge: Cambridge University Press, 2013), 246, 255-261, 263.
[16] William Vogt, "Hunger at the Peace Table," *The Saturday Evening Post*, May 12, 1945, Vol. 217 Issue 46, 17, 109-110.

suffered from Spain's "cultural lag" coupled with indigenous resistance to change, all "reinforced by the modern competitive economic system [which] has resulted in one of the most vampirish, extractive economies existing anywhere in the world today."[17] Much of *Road to Survival* built on Vogt's work for the Pan American Union, during which he toured and produced reports on several Latin American countries, including Mexico, El Salvador, and Costa Rica. Yet it was his interaction with one Guatemalan that anchored his observations and was the parting vignette in three different publications. Vogt wrote:

> A Guatemalan Indian—a literate one—summed up the problem well. I had been showing him, for the first time, the meaning of gullies through the corn and wheat fields, the chocolate color of the river that flowed by. He watched me for a long time, standing with me in the rain; then he said, 'Why my country is a New Atlantis. It is disappearing beneath the ocean.'[18]

The story, almost certainly apocryphal, captured Vogt's belief that patient education and leadership by technicians could stem soil erosion and bring balance to Latin America's ravaged lands.[19] He encouraged experts to blend technical outreach that promoted conservation techniques with adult education strategies that encouraged campesinos to engage with new technologies.

Vogt's story was alarming for Guatemalan readers, especially when coupled with his 1946 report on El Salvador. He concluded that Salvadorians had deforested much of the countryside, attempting to maintain food production as the population exploded. With an average calorie consumption of 1500—lower still for the poorest—Salvadorians suffered from hunger and its attendant diseases. Though many parts of Guatemala remained heavily forested in the 1940s, experts warned that the populous highlands were threatened by deforestation and soil erosion on a scale that surpassed even El Salvador. In 1941, forestry expert Paul Standley catalogued the existence of extensive forests throughout the highlands and Guatemala's Pacific Coast. Yet, he warned that deforestation moved with "sad rapidity" in the highlands because overpopulation and a shortage of land forced peasants to cultivate "almost perpendicular" plots. Campesinos joked that they planted their cornfields with a shotgun but these slopes were prone

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[17] Vogt, *Road to Survival*, 156-157, 162. For a breakdown of Vogt's main ideas, see Cushman, 265.
[18] Vogt, "Hunger at the Peace Table," 110. William Vogt, "A Continent Slides to Ruin," *Harper's Magazine*, Vol. 196: 1177 (1948), 489. William Vogt, *Road to Survival*, 192.
[19] Vogt encouraged a mix of adult education and conservation. William Vogt, *The Population of El Salvador and its Natural Resources*, (Washington, D.C.: Pan American Union, 1946), 29. For more on Vogt's advocacy for education and technical interventions, see Cushman, 268.

to gullying and devastating landslides. The Sija Valley, North of Quetzaltenango, was cited by Standley and then Vogt as an example of deforestation that threatened food security. Standley wrote that trees in the Valley had been "exterminated." Campesinos stoked fires using the roots of grasses, and to save fuel they prepared boiled *tamalitos* instead of traditional tortillas.[20] Foreign experts like Cook, Vogt, and Standley, cultivated an image of Central American forests in disarray and decay, threatened by the careless cultivation habits of poor and uneducated peasants and rapacious capitalists. In their search for general information about maize production and its links to overpopulation and deforestation, experts ignored indigenous efforts to adapt milpa to local conditions.

Although maize fields were ubiquitous, the techniques campesinos used to produce milpa varied according to climate, soil quality and the availability of land.[21] Geographer Felix McBryde argued that the destructive "milpa agriculture" that Cook, Vogt and Standley criticized was actually an intentional and productive agricultural system. McBryde, a student of respected geographer Carl Sauer, travelled widely throughout the Highlands and the Pacific Coast during the 1930s and 40s and observed a wide variety of cultivation techniques used to produce milpa. McBryde insisted that the milpa was a flexible category that accommodated significant variations in growing practices along a spectrum from swidden to sedentary agriculture. Even though indigenous communities in the Highlands carefully maintained the same fields for decades, there was "not an individual in the entire area who would not call his cornfield 'milpa'…as that is the one universal word for it, there being no general synonym."[22]

To emphasize his point, McBryde compared two towns on Lake Atitlán. Campesinos living around the picturesque lakeside town Panajachel expected a good maize harvest for five years, then the land was left to fallow for 5 years before replanting. In contrast, most of the land around Santiago de Atitlán—on the opposite side of the Lake—was planted for only three to four

[20] David McCreery notes the area around San Carlos Sija was occupied by a pastiche of indigenous communities, small haciendas and "ladino squatters and small holders" who lived in conditions similar to many indigenous communities. Ladinos from San Carlos Sija petitioned the government for land on the South Coast in the late 19th century and eventually formed the new community of Nuevo San Carlos. For settlers, the area was notable for its extensive tree cover, broken only by a few small cornfields. This implies the long-term scarcity tree cover in the Sija Valley. McCreery, *Rural Guatemala*, 41, 255. Paul C. Standley, "The Forests of Guatemala," *Tropical Woods*, No. 67 (1941), 18. See also Vogt, *The Population of El Salvador and its Natural Resources*, 9.

[21] For an overview of the benefits of milpa, including promoting species diversity and enabling high return on energy invested see Miguel Altieri, "Agroecology: The Science of Natural Resource Management for Poor Farmers in Marginal Environments," *Agriculture, Ecosystems and Environment*, 93 (2002): 3.

[22] McBryde, 17.

years and then allowed to rest for fifteen to twenty years. McBryde speculated that residents of Santiago Atitlán practiced short rotations—compared the regional norm of 5 years—because they had more "good land per capita" than other comparable communities. There was also significant variation around these towns because the Lake was surrounded by volcanoes and this created several micro-climates in close proximity. The low-lying land around Santiago Atitlán could be planted for ten to fifteen years before it was rested because the weather was warm and the soils were fertile. At higher altitudes rotations were shorter and common practices like inter-cropping were not used because the added weight of beans made milpa more susceptible to wind. [23] McBryde's work demonstrated that milpa cultivation was heavily influenced by environmental and political factors that varied even in a relatively contained region like Lake Atitlán.

In 1940, anthropologist Raymond Stadelman challenged the belief that milpa cultivation caused wanton deforestation in a broad survey of maize production strategies in the northerly Department of Huehuetenango. He demonstrated that what critics like Cook labelled deforestation was actually a complex long-fallow system. Stadelman noted that most of the communities he surveyed maintained forests that were "continually being cleared and planted" to support the community.[24] Newly cleared forests offered the highest corn yields—nearly 33 bushels per acre—and this land could be planted for up to ten years before it had to be rested.[25] After three years, campesinos burned away the secondary brush and replanted the land in a cycle that continued until the roots were all but destroyed. During this time, yields fell off from a high of twenty five bushels per acre to a low of four to eight bushels. When the land was no longer productive enough, it was left as grassland for fifteen to twenty years and—except at high altitudes where regrowth was slow—it returned naturally to forest.[26] Critics travelling through communities did not observe these long-term fallow patterns, which indicated a careful and measured approach to milpa cultivation that prioritized long-term productivity. Instead, they complained that indiscriminate burning caused forest fires and accelerated soil erosion. Stadelman defended fire as an efficient tool for clearing land that destroyed potential pests and

[23] McBryde also mentioned colonial rotations in the Verapaz region, which involved planting corn for two years followed by a 10-15 year fallow. Felix McBryde, *Cultural and Historical Geography of Southwest Guatemala*, (Washington: U.S. Government Printing Office, 1947), 17, 19.
[24] For example, around Totonicapán and Sololá McBryde observed furrows could be seen beneath pine forests, and though heavily settled regions like the valley of Quetzaltenango were "largely deforested" residents carefully cleared weeds and gathered brush for firewood. McBryde, 19.
[25] Stadelman's informants believed this was an "excessive" amount of time to keep the land in production.
[26] Stadelman, 117.

added nutrients to the soil. The most serious drawback of repeated burning was soil erosion and nutrient leeching that occurred when newly cleared land was exposed to intense rainfall.[27] However, campesinos mitigated some nutrient loss and soil erosion by using contour-furrows and fertilizing fields.[28]

Collecting fertilizers was a time intensive process that demonstrated an effort to plan for the future and conserve precious soils that did not agree with official rhetoric about careless milpa production. McBryde argued that "fertilizing of the land is common and widespread" in the Highlands although "seldom practiced" in the extremely fertile lowlands. Campesinos used a variety of fertilizers based on local agro-ecosystems: residents of the lake area relied on maize leaves whereas animal manure was common in Sololá and in the cattle towns of Cajolá, Chiquilajá and San Andrés Xecul.[29] Although campesinos had little capital and less land, they had a surplus of labor power that they applied judiciously to make their land productive. Raymond Stadelman found that campesinos enjoyed higher returns from land that had been fertilized and many were willing to invest the extra labor needed to collect fertilizer and manure. In Todos Santos Cuchumatán fertilization was "recognized by Indians as the salvation of the soil, without which the highlands would soon become useless for maize production."[30]

The sustainability of milpa cultivation was heavily dependent on political and population dynamics that were driven by the shift from communal land to private property that began in the 19th century. The amount of communal land held by indigenous communities declined throughout the 20th century, however, milpa production on these lands was carefully controlled by tradition that favored long-term productivity. In the community of San Antonio Huista, Huehuetenango, communal land was divided into two large areas: one was cultivated and the other was left fallow and often used to graze animals. In the area open to cultivation, campesinos claimed small plots—roughly 2.7 acres in size—by clearing a strip around their new maizefield. From afar, this pattern of land use seemed chaotic but in practice milpa production was regulated

[27] Ibid., 109-110.
[28] Intentional fertilization dramatically shortened fallow periods and allowed for extended cultivation, but yields were half that obtained from newly cleared forestland. Stadelman, 101, 117; McBryde, 17.
[29] McBryde estimated that residents of Sololá applied 80-100lbs of a leaf and manure mixture per cuerda. A cuerda varied in size depending on location, but was roughly .3 acres. McBryde, 20.
[30] Raymond Stadelman found that in Todos Santos Cuchumatán fertilization was "recognized by Indians as the salvation of the soil, without which the highlands would soon become useless for maize production." Raymond Stadelman, "Maize Cultivation in Northwestern Guatemala," in *Contributions to American Anthropology and History*, 6 no. 33 (Washington: Carnegie Institution of Washington, 1940), 104.

by established community norms. Liza Grandia, examining the enclosure of common land in the Petén, argues that for the Q'eqchi' "commons are not only material places but also the relationship of an individual to his or her community."[31]

The dissolution of communal land increased social inequality and exacerbated environmental problems. In communities where private property was the norm, campesinos had to own or have access to significantly more land than those living in areas with communal land. Depending on local soil fertility, it took between three and six acres of land to keep milpa productive because half of the holding had to be left in fallow at all times.[32] In the early 1940s, anthropologist Charles Wagley argued that growing inequality in Santiago Chimaltenango, Huehuetenango was driven by a shift to private land. Social prestige in among Chimlatecos was determined by access to the region's most precious resource, land. However, there were very few winners in the transition to private land. "With many of the wealthier," Wagley wrote, "the lands they inherit form the foundation for future accumulation…[b]ut when a family owns only fifty or sixty *cuerdas*, equal division between two or three brothers leaves each almost landless."[33] Families that fell below the threshold to support themselves had several options. Some campesinos migrated to the coast to work on plantations, but they often used a portion of their wages to pay family members to care for their milpa.[34] If they could afford to, many campesinos also rented milpa land in neighboring communities. Although coastal migrations were well documented, internal migrations were not always evident to observers because campesinos collected their corn and returned to their home community. For example, Stadelman noted that the community of Todos Santos was known as "the granary of Huehuetenango" but most of the maize sold in markets had been produced elsewhere. Stadelman argued that without this additional influx of corn "starvation would be the rule rather than the exception" because there was a shortage of arable land in Todos Santos.[35]

Mayan milpa cultivation was productive and relatively sustainable, provided communities had sufficient land. Over generations, campesinos created a thoroughly humanized

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[31] Liza Grandia, *Enclosed*: *Conservation, Cattle, and Commerce Among the Q'eqchi' Maya Lowlanders* (Seattle: University of Washington Press, 2012), 4.
[32] Stadelman, 105.
[33] Charles Wagley, "Economics of a Guatemala Village," *Memoirs of the American Anthropological Association* 43, no. 3 (1941): 31-44. For an updated perspective see John Watanabe, *Maya Saints & Soils in a Changing World* (Austin: University of Texas Press, 1992), 76.
[34] Stadelman, 103.
[35] Ibid., 102, 125.

landscape and forests were slowly converted into grasslands and open forests. Though modernizers worried that Guatemala's forests were disappearing, this transformation created mosaic landscapes that increased species diversity and encouraged the growth of wild edibles.[36] However, steady population increases throughout the 20th century coupled with rising inequality placed considerable stress on the milpa agroecosystem. This problem was aggravated by the shift from communal land to private property. To compensate for their limited access to land and population growth, campesinos often had to shorten fallows or rent new land that could be used for milpa. Over time, this created some of the environmental problems that modernizers were concerned about, including soil erosion. However, government officials also often had trouble differentiating between deforestation—which they saw everywhere—and carefully constructed long fallows that utilized fire as a tool for clearing and preparing land. This disjuncture was caused by policymakers and agronomists who wanted to radically reorganize Guatemala's agrarian landscape and saw milpa as an obstacle to this mission.[37]

Maize as Monoculture

Government reports in the 1940s followed Cook, Vogt and Standley, blaming milpa for widespread deforestation and soil erosion. Traditional corn cultivation was frequently depicted as an obstacle to modernization that endangered Guatemalan forests, naïve campesinos and low-lying communities. A 1949 report from the Soil Conservation Division urged officials to pay serious attention to Guatemala's flagging soil fertility. Citing high population density and the abundance of rugged terrain with inclines ranging between 25-90%, they concluded: "Guatemala is a country in which the optimism about fertility should be decreased."[38] The Division highlighted several problems including the poor maintenance of pastureland and the loss of nutrients due to frequent burning to clear new land. Speaking of the highlands, they warned that the "merciless action of hatchet and fire" had stripped the land bare forcing campesinos to burn

[36] Andrew S. Matthews, *Instituting Nature: Authority, Expertise, and Power in Mexican Forests* (Cambridge, Mass: MIT Press, 2011), 77.

[37] This desire to standardize land use was a common goal of agrarian reformers, especially in developing countries. James Scott, *Seeing Like a State*, 41.

[38] Population density was 64 person per kilometer. Importantly, the vast Petén and sparsely inhabited region was not considered in these calculations. Division de Conservación de Suelos, "Republica de Guatemala: Metodos de Organización, Para sus Trabajos de Conservación de Suelos," July 2 1949. Min. Ag. Leg. 421. AGCA, Guatemala.

roots and dried manure. "The soil in many of these areas," concluded the report, "has disappeared and where it remains it is deficient in organic matter."[39]

The Division portrayed campesinos as a force of nature and that could not be restrained by fines or regulations, even close to Guatemala City. They blamed this feverish rush to clear and plant land on "rudimentary" maize production, which the Division concluded was the "only wealth" of most campesinos. Although they recognized that maize was important to campesinos, the Division condemned maize as a monoculture that "degrades our soils"[40] This was a counter-intuitive use of the word monoculture, but it appeared frequently in government correspondence throughout the Revolution. Modernizers believed that traditional corn was a monoculture for ideological and practical reasons. As discussed in the previous section, many experts simply did not recognize the complexity of indigenous milpa cultivation and so they disregarded the complex interplanting patterns used by most campesinos. However, the Ministry of Agriculture also believed that milpa cultivation discouraged campesinos from making the transition from subsistence-oriented production to market farming. The characterization of corn as a monoculture also reflected a nationalist discourse that urged all farmers to embrace crop diversification because it created a stronger, more modern national economy.

Zealous reformers who wanted to rapidly modernize Guatemala emphasized indigenous predation on soils and forests, minimizing the role export agriculture played in accelerating deforestation in new commodity frontiers like Quetzaltenango, the Pacific Coast and the Motagua Valley.[41] A report from the Department of Forestry calculated that nearly 80% of deforestation was caused by forest fires that began when campesinos burned land for maize production. They characterized intentional burning as "one of the principal causes of the impoverishment of our agricultural soils."[42] The Department argued that the shortage of land and dwindling soil fertility in the highlands placed pressure on indigenous farmers to continually open up new land for subsistence cropping. They described a system in which campesinos wastefully abandoned land cultivated with corn for only 2-3 years and "continued their

[39] Ibid.
[40] Ibid.
[41] Burning of lumber for electricity, especially around Quezaltenango consumed upwards of 200,000 trees per year. Yet the report emphasized that forest exploitation was limited to axes and animals to draw lumber from forest. Only 8% of extraction utilized mechanical means—saws and tractors—to pull and process lumber. Dirección General Forestal, "Guatemala Forestalmente," n/d. Min. Ag. Leg. 421. AGCA, Guatemala.
[42] The report also noted that 20% of the deforestation could be attributed to the expansion of the railroads and commercial forestry, a factor which we explore in more detail below. Ibid.

destructive actions with the axe, saw and machete, opening the mountains and leaving behind a cemetery of burned trees and soils prepared for the invasion of the destructive action of erosion."[43] The Soil Conservation Division estimated that across the highlands, nearly 120,000 hectares were highly vulnerable to erosion. Visitors to Chimaltenango, Quetzaltenango or the Verapaces would quickly encounter dramatic evidence of destructive erosion, as torrential rainfall common to the region created rills and gullies on exposed slopes. They concluded that, "No crop has caused so much damage in this sense as corn." [44]

Throughout the 1940s, the government focused on indigenous agriculture as the obstacle to agricultural modernization because this narrative fit within centuries of racial discourse about the Maya, but it was also politically expedient. Transforming the labor habits of powerless indigenous farmers was far easier than implementing a land reform that challenged the power of large landowners. The campaign was inspired by the U.S. New Deal, which was unsurprising given that President Arévalo had publicly declared his admiration for Franklin D. Roosevelt.[45] In 1945, the Ministry of Agriculture began a conservation campaign that promoted the value of forests to farmers and campesinos. The Ministry of Agriculture created a Soil Conservation Division that documented the extent of rural deforestation and soil erosion. They travelled to remote communities to demonstrate techniques for conservation and they created films and photographs that a made a powerful, even visceral, argument justifying state intervention in the countryside.[46] The Ministry of Agriculture also published editorials, information pieces, and poems which tried to convince Guatemalans that rampant deforestation threatened the stability of the nation and the lives of farmers.[47]

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[43] Ibid.

[44] Erosion was most pronounced in the Departments of San Marcos, Chimaltenango, Quezaltanengo, HueHuetenango, Totonicapan, Solola, Jalapa, and Alta and Baja Verapaz. "Planes y Programas para el Desarrollo Agropecuario" n/d, Min. Ag., Leg 421. "Estudios Tecnicos en General 1951-1955." AGCA.

[45] Handy, *Gift of the Devil*, 107.

[46] Division de Conservación de Suelos, "Republica de Guatemala: Metodos de Organización, Para sus Trabajos de Conservación de Suelos," July 2 1949. Min. Ag. Leg. 421. AGCA, Guatemala.

[47] The Guatemalan state created no equivalent to the U.S. Civilian Conservation Corps, a depression-era initiative which offered working class men from the city jobs in rural settings. This was a powerful political tool that Roosevelt used to expand political support for the New Deal, but CCC members also worked on rural conservation projects. Though the Guatemalan government engaged in extensive extension work, no complementary movement emerged in Guatemala because labor was monopolized by large plantations. Peasants participated in reforestation and soil stabilization initiatives, but these piecemeal projects were not the basis for a conservation movement. See Neil M. Maher, *Nature's New Deal: The Civilian Conservation Corps and the roots of the American Environmental Movement*, (Oxford: Oxford University Press, 2008).

The Guatemalan government's vision of conservation was narrowly focused on the 'wise use' of nature's resources over preservation.[48] The Ministry of Agriculture encouraged farmers to protect the environment and they frequently emphasized the financial value of Guatemalan forests and watersheds. Historian Samuel Hays argued that this utilitarian definition of conservation favored "rational planning to promote efficient development and the use of all natural resources." This definition of conservation emphasized the importance of scientists and technicians as shepherds of abundance, enabled by a political system that prioritized efficiency.[49] Yet a conservation campaign that did not engage the rural population as equals, often imposed a state-mandated definition of 'wise use' that reflected national priorities but poorly addressed local concerns.

Articles and editorials examining the extent and causes of deforestation began appearing with regularity following the election of President Arévalo. Though they were often couched in scientific language, many of these early editorials criticized the Ubico administration. In January 1945, the effects of erosion in the Oriente were discussed in an exchange between Nicanor and Juan Arrivillaga.[50] The former—an editorialist for Guatemala's major daily, *El Imparcial*—included dramatic pictures of eroded lands found on the haciendas of El Rosario, Cerro Redondo, and La Pastoría. The roots of massive trees were exposed for several feet below the base of the tree; proof of the loss of several feet of soil in the last few decades (Figure 3). Nicanor argued that deforestation was an urgent problem, noting that the effects of rampant deforestation and erosion in the Oriente could be seen from the benches of Guatemala City's Parque Central. He blamed deforestation on Ubico administration's failure to protect Guatemala's precious soils and forests:

> How many centuries will be needed to replenish the immense damage caused by soil erosion as a result of the merciless cutting of forests throughout the Republic? Throughout the trip [to Gualán], from the exit of the Capital, on both sides of the railroad, all you see are clearings and, who would believe it, where damages are most manifest, is in the farm of Doctor Cruz, our ex-Minister of Agriculture and External Relations…?

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[48] For the political struggle between these two factions in U.S. politics see Samuel P. Hays, *Conservation and the Gospel of Efficiency*: *The Progressive Conservation Movement, 1890-1920*, (Pittsburgh, Pa.: University of Pittsburgh Press, 1999), 189. For a focus on the preservation side of the movement see Roderick Frazier Nash, *Wilderness and the American Mind*, 4th edition (New Haven and London: Yale University Press, 1967, 2001).
[49] Hays, *Conservation and the Gospel of Efficiency*, 3.
[50] According to the author, these images of soil erosion were also published in the major daily *El Imparcial*. Juan Arrivillaga, "Efectos de la Erosion en Tierras del Sur Oriente y Medios para Evitarla," *Revista Agrícola*, January 1945, 130.

> Where are the six million trees that the hypocrite Ubico claimed, in his annual reports, to have planted?[51]

He reminded readers that the fall of societies was linked to deforestation, and urged Guatemala to follow the example of the United States where reforestation to combat erosion was a national priority.[52] If action was not taken quickly, Nicanor quipped that the country might find itself with only the earth found in a campesino's belly button.

In his response to Nicanor's letter, Juan Arrivillaga affirmed the seriousness of the problem and offered strategies for preventing or arresting soil erosion. He acknowledged that plowing up new land could contribute to erosion, but he focused on peasant agriculture as the pressing problem. "Our routine hoe cultivation," he wrote, "without the care of the good farmer, have taken to the bottom of the sea the best of our farmland, leaving the subsoil exposed, as it were *pure bone*."[53] He advised farmers to open land selectively instead of "clearing and burning it as is common custom, to get two or three crops of maize and lose the earth to erosion."[54] Arrivillaga believed that modern agriculture permitted intensification without causing deforestation and soil erosion and he was optimistic that experts could find technical fixes for modern erosion issues.[55] His analysis of milpa cultivation ignored evidence that campesinos routinely used contour furrows and other techniques to limit erosion.[56]

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[51] Ibid.
[52] Neil M. Maher, *Nature's New Deal: The Civilian Conservation Movement* (Oxford: Oxford University Press, 2008), 54
[53] Juan Arrivillaga, "Efectos de la Erosion en Tierras del Sur Oriente y Medios para Evitarla," 130.
[54] Ibid.
[55] He also advised the state to disseminate kudzu plants which would anchor erosion-prone soil. Kudzu was used to control soil erosion in the American South, but it quickly became invasive. See Mart Allen Stewart, "Cultivating Kudzu: The Soil Conservation Service and the Kudzu," *The Georgia Historical Quarterly*, Vol. 81: 1 (1997), 151-167.
[56] McBryde, 20.

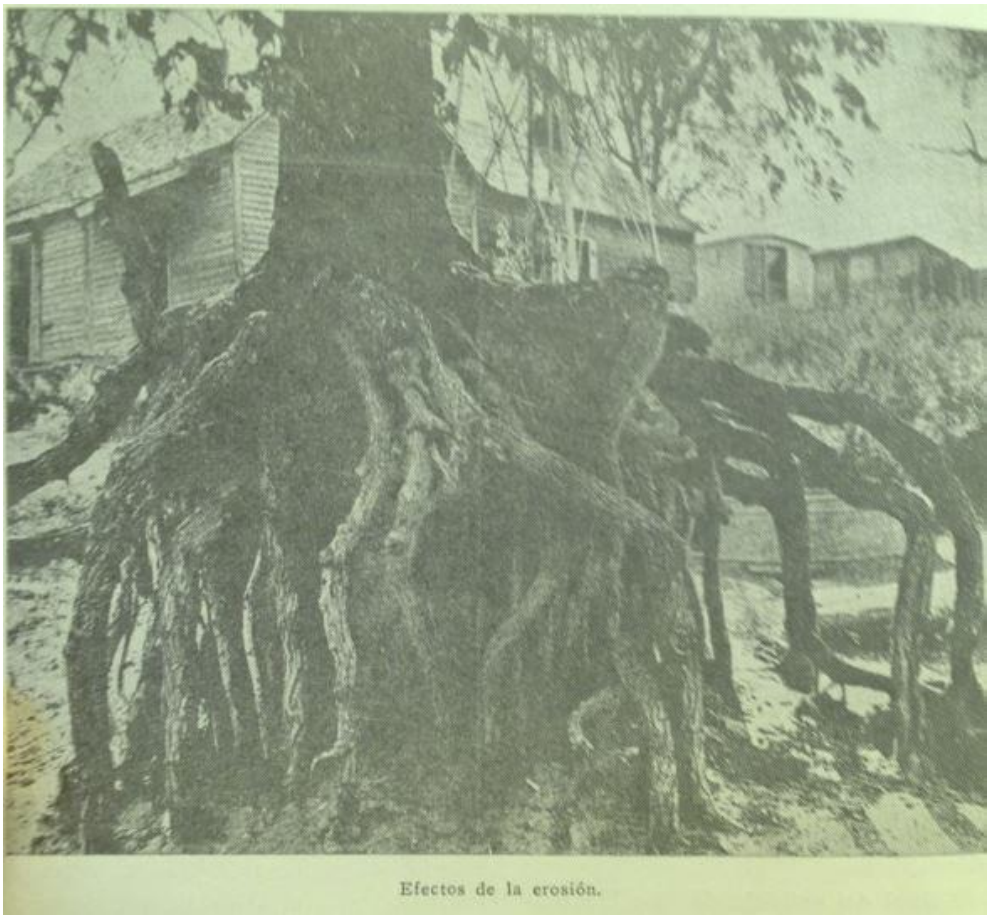

Figure 2: Photo demonstrating topsoil loss due to erosion[57]

Focusing on campesinos as agents of deforestation enabled modernizers to articulate a state-led plan for rural intervention that engaged large landowners as partners. An editorial in *Revista Agrícola* warned ominously that over generations "the barbarous custom of burning" to clear land had rendered Guatemala's forests incapable of natural regeneration. The *Revista*'s editors warned that many productive regions were on the verge of becoming deserts and they implored large landowners to allow the state to plant valuable trees on their land. This scheme would rapidly increase forested land, improve the health of watersheds and give landowners preferential access to precious lumber. The *Revista Agrícola*'s editorials and advertisements appealed to the rich on the basis of economic potential, but their message to the campesinos emphasized that deforestation would lead to poverty, hunger, and forest fires. They encouraged

[57] Arrivillaga, "Efectos de la Erosion en Tierras del Sur Oriente y Medios para Evitarla," 134.

the state to regulate forest resources to protect campesinos, arguing that deforestation would destroy the previous watersheds that the poor needed to survive.[58]

The Ministry of Agriculture responded to growing concern about deforestation by drafting a new law protecting forests that was passed with amendments by Congress in October 1945.[59] The Ministry published a draft version in June, justifying it as a needed update to the existing forest law that had been passed 20 years earlier. The overarching goal of the legislation was to give the state the power to compel private landowners to preserve forests along major watersheds, rivers and on slopes with inclines over 15%. The Ministry alleged that the 1925 law was too vague and lacked enforcement mechanisms, allowing private landowners to effectively manage land as they wished. They argued that landowners—driven by "ignorance or lack of scruples"—had over-exploited forests on private lands. This was construed by the Ministry as both a long-term financial loss for the nation and a cause of serious erosion that threatened productive areas of the country with flooding and other calamities including famine.[60]

The state tried to assert control over the countryside by leveraging the threat of national disaster, but though its legal authority grew its practical control over the countryside remained limited. One of the most controversial aspects of the new law was Article 5, which required landowners to acquire state consent prior to cutting down forests. This article was enforced by forest rangers, but these were heavily concentrated in the lightly populated Department of El Petén.[61] In a 1946 issue of the *Revista Agrícola*, the Ministry assured landowners that the intent of Article 5 was not to seize private land, but rather to foster rational forestry with long term financial benefits instead of cutting for immediate gain. The law exempted agricultural land with slopes under 15% and areas with crops needing shade trees, which protected coffee producers on the Pacific Slope.[62] The Forest Law was more stringently enforced in the Petén, where the government tried to protect chicle and valuable trees, and throughout the highlands than on the Pacific Coast.[63]

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[58] "Temas Forestales: Un Sistema de Reforestation Practico y Economico," *Revista Agrícola*, April 1945, 355-356.
[59] For full text of Decree 170 see "Aprobada La Nueva Ley Forestal," *Revista Agrícola*, August-September 1945, 555-563.
[60] "Seccion Forestal: El Ministro de Agricultura, Don Roberto Guirola se Dirige Al Congreso de la Nación," *Revista Agrícola* June-July 1945, 487.
[61] For criminal sanctions see Handy, *Revolution in the Countryside*, 151. fn 51.
[62] "Explicaciones Al Articulo 5o. De Nuestra Ley Forestal," *Revista Agrícola*, July-December 1946, 356.
[63] Reports from forest rangers focus heavily on the Petén. See Min. Ag. 1911.

Comparing the draft drawn up by the Ministry of Agriculture and the final law highlights areas where policymakers struggled to come to a consensus. Article 24 of the Forest Law forbade the use of fire to clear new land, a practice that was closely identified with subsistence corn production. In order to "eradicate this practice," the draft version of Forest Law published in June 1945 gave the State authority to resettle "reluctant cores" to areas where agriculture would do less damage to forest resources.[64] This language was eliminated from the final law, and replaced with a commitment to convince farmers of the value of forests through education and demonstration. The rationale for this change was likely a mix of political pragmatism and input from more progressive members of the Arévalo administration who believed strongly in the transformative potential of extension work. Nevertheless, it exposed a core tension in early agrarian modernization work between proponents of slow reform through education and those who endorsed more radical solutions, including colonization and forced relocation. This second group favored the creation of a rationalized agrarian landscape that encouraged large, industrial-scale farms on the coast and smaller, market-oriented farms throughout the highlands.

In 1946, *Revista Agrícola* published a special issue focused on Guatemalan forests that included several photo essays documenting agrarian landscapes in Guatemala. The government's Aerial Forest Service argued that photos taken from the air were powerful tools for education and they asked farmers to learn to "read the land" in order to become "our best collaborator." [65] This simple request was laden with ideological meaning: reading the land correctly meant accepting the bifurcation of Guatemala's landscapes into the overworked highlands and the untapped lowland frontier. Aerial photography gave experts an unrivalled ability to observe peasant activity, but were often unable to see the benefits of different types of traditional agriculture in situ. As James Scott argued, this simplification facilitated governance by reducing the natural world to a handful of key variables.[66] Viewing agrarian landscapes from afar enabled policymakers to identify agricultural practices they deemed wasteful and contemplate resettlement initiatives for communities that did not fit into their vision for a rationalized agrarian landscape. [67]

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[64] Roberto Guirola, "Seccion Forestal: El Ministro de Agricultura, Don Roberto Guirola, Se Dirige Al Congreso de la Nación," *Revista Agrícola*, June-July 1945, 491.
[65] "Servicio Aéreo Forestal," *Revista Agrícola*, July-December 1946, 279.
[66] James Scott, *Seeing Like a State*, 24.
[67] David Biggs, "Aerial Photography and its Role in Shifting Colonial Discourse on Peasants and Land Management in Late-Colonial Indochina 1930-1945" in *Cultivating the Colony: Colonial States and their Environmental*

The first collection was by the Instituto Agropecuario Nacional (IAN), a branch of the Ministry of Agriculture founded in 1945 that was dedicated to agricultural experimentation and research. These photos highlighted the agrarian potential of the South Coast—still largely forested—and presented examples of upland coffee and cinchona farms on the Pacific slope. The photos were carefully picked to support the argument that large, modern farms were able to balance productivity with forest conservation.[68] There were several images of heavily forested lowland stretches of the Michatoya River which runs through the Department of Escuintla. The captions emphasized the Michatoya's importance for large plantations, which had built extensive irrigation works to divert water to sugar plantations. Another photo of forests found in an undefined region "south of Retalhuleu" emphasized the vast expanses that had yet to be planted with cane and bananas. Only photos featuring farms close to the lowland city of Retalhuleu and the UFCo owned plantation of Tiquisate reversed the equation by showcasing large planted fields. These images of orderly and productive fields were supposed to highlight benefits of private initiative on the Pacific Coast, which created productive fields out of the forests that dominated the coast.

The photos featured in the IAN collection also advertised the productivity benefits of environmentally-sensitive development in the highlands. Images of Finca *El Naranjo*, with its terraced slopes planted with thousands of new cinchona trees, demonstrated how Guatemalans could produce exports on more rugged lands. Similarly, the "magnificent" coffee plantation *Buena Vista* was lauded for its well-conserved forests. This set of photos ended with a vista of the Guatemalan border with El Salvador. On one side of this mountainous border, the forests were well conserved whereas on the Salvadorian side the slopes were largely deforested.[69] These images made a strong argument for conservation as a practice that increased productivity on more fragile highland soils, but they routinely ignored campesino efforts to conserve soils by furrowing.

The destructiveness of indigenous campesinos was reinforced in a complimentary photo essay sponsored by the Aerial Forest Service that featured images of deforestation from highland

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Legacies, eds. Karen Oslund, Niels Brimnes, Christina Folke Ax, Niklas Thode Jensen (Athens OH: Ohio University Press), 110. 129; David Biggs Quagmire: Nation-Building and Nature in the Mekong Delta (Seattle, WA: University of Washington Press, 2010), 12-13.

[68] "Guatemala a Ojo de Pajaro," *Revista Agrícola*, July-December 1946, 274.

[69] "Guatemala A Ojo de Pajaro", *Revista Agrícola* July-December 1946, 274-278.

Guatemala. Photos from the Tecpán region showed how indigenous communities cultivated recently cleared land, "the land that belongs to the forest," without taking precautions against soil erosion. "Meagre harvests," they wrote, "and the constant specter of desolation is the punishment of the man who destroys the forest, his best friend and firm ally." Another photo of a mountain road in San Mateo Ixtatán, Huehuetenango emphasized the destruction wrought by the "thoughtless indian" who had cleared the land with fire and axes. The images collected for the *Revista Agricola*'s special issue were presented as evidence that the state had to impose conservation measures in the highlands, to save the forest from purportedly careless Mayan farmers. [70]

To convince the public about the destructive consequences of milpa cultivation, the Department of Forestry created an assortment of ads linking deforestation with imminent death. Readers were warned repeatedly that deforestation harmed agricultural productivity—inviting soil erosion and reducing water retention—and squandered precious lumber. Some ads emphasized the immediate risk of forest fires, in an attempt to dissuade indigenous farmers from using fire to clear land. An ad published in late 1945, showed a frantic indigenous woman, her son, and their livestock fleeing a fire consuming their homestead. The text explained that these tragedies occurred frequently during the dry period and urged Guatemalans to collaborate with the Ministry of Agriculture's national forest campaign to minimize the risk of wildfires (Figure 4).[71] Another advertisement showed a lone goat in a field of stumps, littered with erosion gullies with the by-line: "Now there is not enough food even for a goat." (Figure 3)[72] The ad was followed by a short editorial that urged farmers to carefully consider how clearing forests for corn caused erosion and undermined the long-term viability of their communities.[73]

[70] "Servicio Aereo Forestal," *Revista Agrícola*, July-December 1946, 279.
[71] The ad also warned that those who caused fires, accidentally or not, would be subject to sanctions under the new forest law. "!Alerta Guatemaltecos! !Cuidado con los Incendios!" *Revista Agrícola*, October-December 1945, 770.
[72] "Colabore en la Defensa de Nuestras Bosques," *Revista Agrícola*, October-December 1945, 786.
[73] "Campaña Forestal," *Revista Agrícola*, October-December 1945, 785.

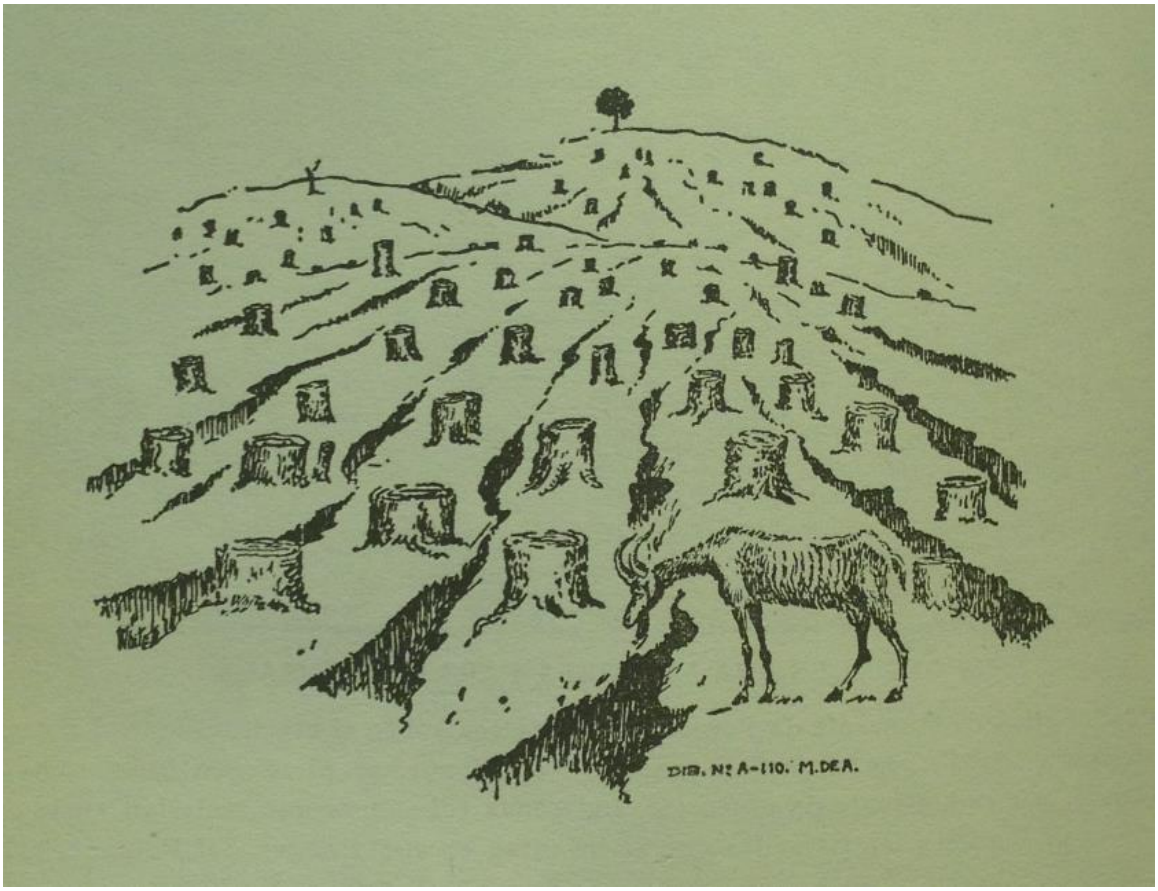

Figure 3: "Now there is not enough food even for a goat."[74]

[74] "Colabore en la Defensa de Nuestros Bosques," *Revista Agrícola* October-December 1945, 786.

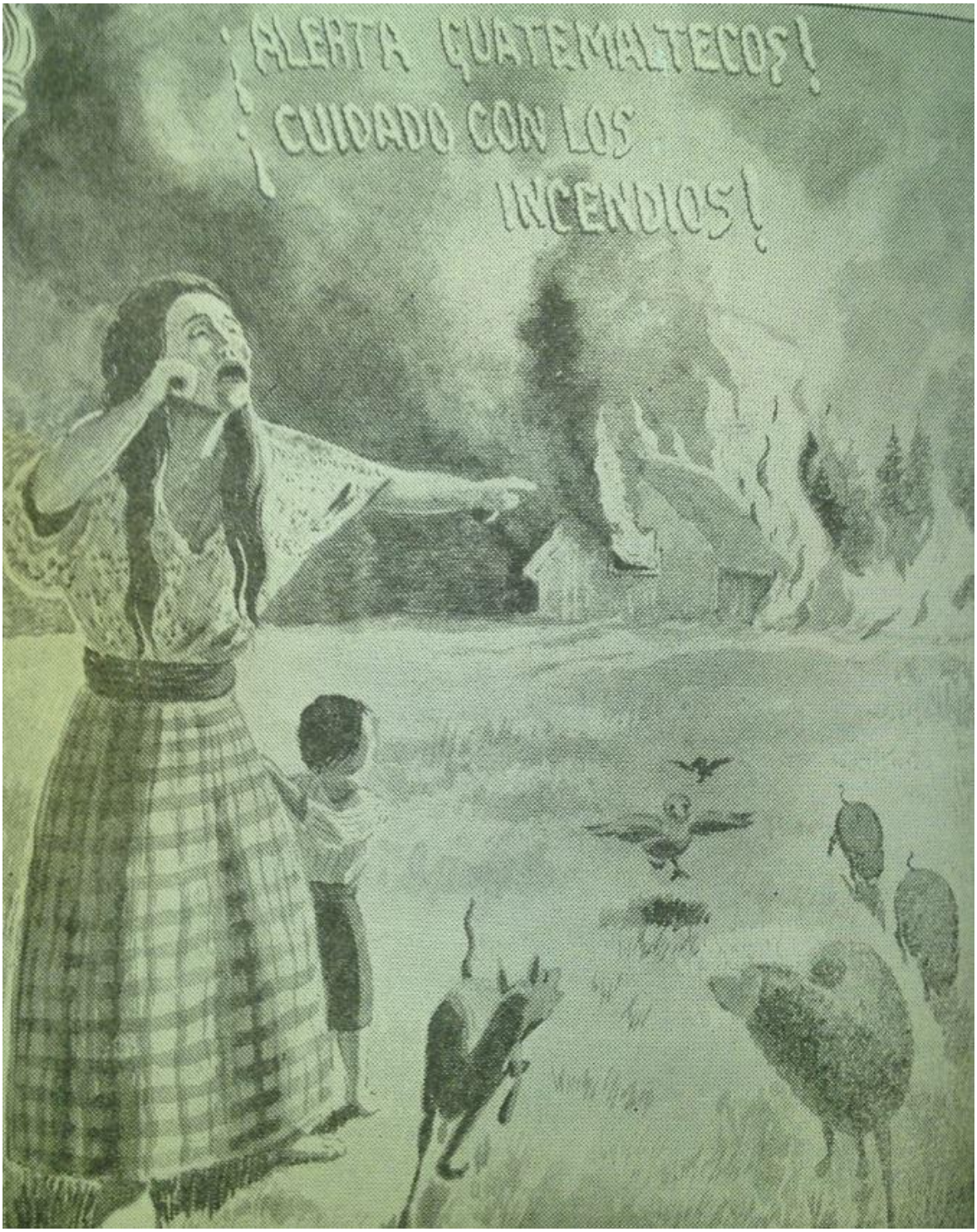

Figure 4: Indigenous family fleeing forest fire caused by intentional burning.[75]

[75] "¡Alerta Guatemaltecos! ¡Cuidado con los Incendios!" *Revista Agrícola*, October / December 1945, 770.

This advertising campaign also encouraged Guatemalans—rich and poor—to respect government authority and internalize official ideas about conservation. The government encouraged all Guatemalans to recognize their responsibility as both citizens and stewards of scarce forest resources: "Every Guatemalan should be a forest ranger jealous of their forest wealth, which belongs to all."[76] However, ads targeted to larger landowners emphasized the economic value of carefully managed forests with an advertisement that showed a row of trees—implying a managed forest—connected with an arrow to a large bag of cash. The caption stated simply: "All trees are money"[77] Though officials frequently mentioned the economic benefits of forest conservation, they continued to use the specter of disaster as a rationale for regulating campesinos. An ad on the opposite page featured an imposing hand in the top corner of the image, pointing at a campesino, climbing a large tree to cut limbs for firewood. In the foreground there were tree stumps and in the background a field of trees being systematically limbed. The Department of Forestry warned that this traditional means of gathering firewood robbed the soil of important nutrients and eventually killed the tree, leading to soil erosion (Figure 5).[78] Many of these ads were carefully framed to encourage campesinos to willingly cooperate with the Revolutionary government, which modernizers presented as a patriarchal benefactor. One ad made this cooperation explicit by picturing a campesino and a forest ranger shaking hands in a symbolic bridging of the class and cultural gap that divided rangers—and government experts—from the communities they patrolled.[79]

[76] "Campaña Forestal," *Revista Agrícola*, Octubre, Noviembre, Diciembre, 1945, 785.
[77] "Todo Bosque for Pequeño que Sea…" *Revista Agrícola*, Julio a Diciembre, 1946, 361. (2044)
[78] "La Censurable Costumbre que Existe Hace Muchos Años," *Revista Agrícola*, Julio a Diciembre, 1946, 360.
[79] *Revista Agrícola*, Octubre, Noviembre, Diciembre, 1945, 781.

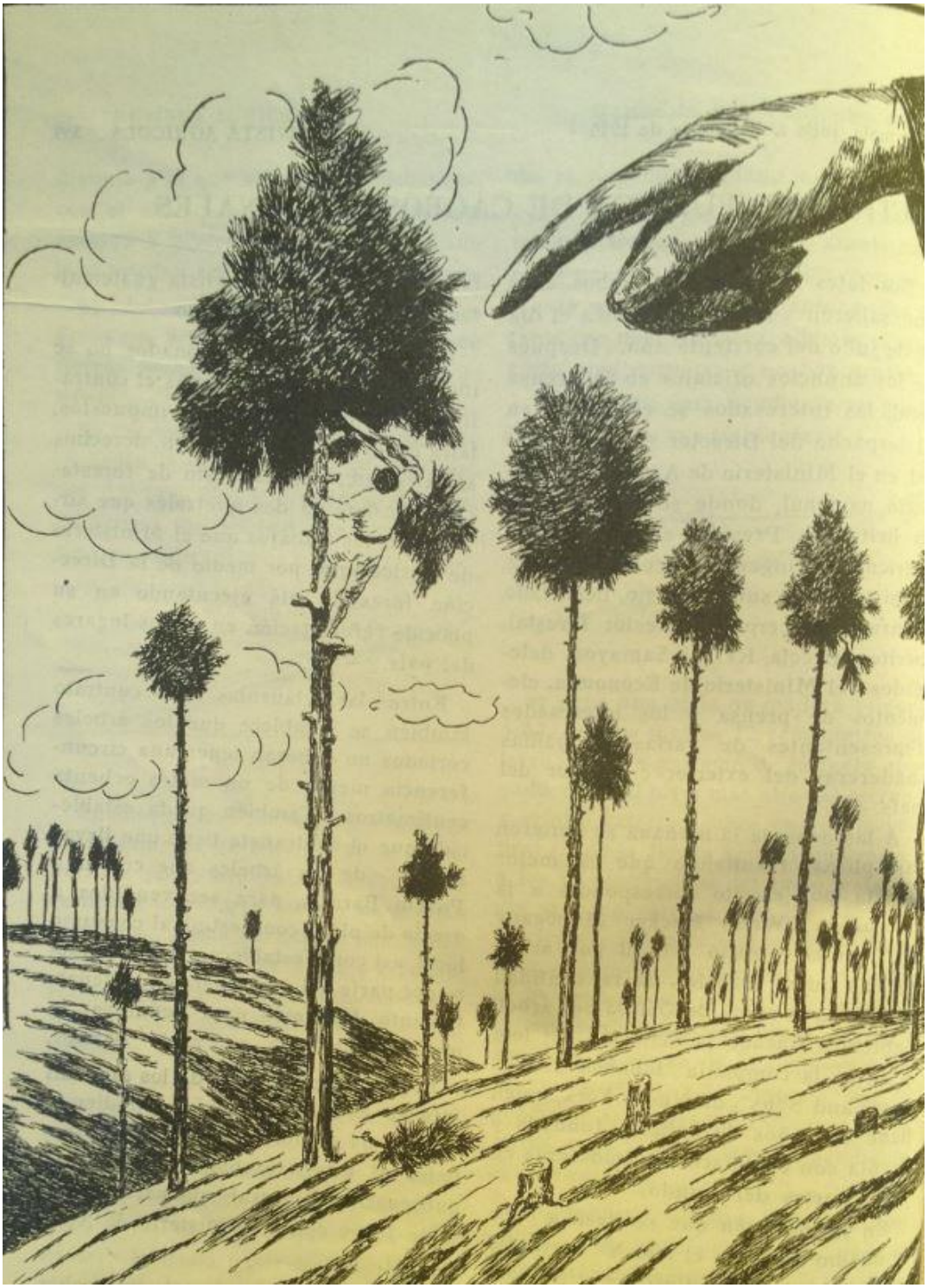

Figure 5: The hand of the state observing and regulating campesinos.[80]

[80] "La Censurable Costumbre que Existe Desde Hace Muchos Años," *Revista Agrícola*, July-December 1946, 360.

The Arévalo government believed that they could induce campesinos to adopt conservation by mixing regulation with education. For this to work, peasants had to accept expert tutelage as a responsibility of citizenship or the nation would face dire consequences. The special issue of the *Revísta* featured an extended editorial that highlighted the destabilizing political effects of soil erosion around the world. The editorial was placed beside a simple ad entitled "Citizens." The sparse advertisement featured only text that urged patriotic—and presumably ladino—Guatemalans to help with the forest campaign by teaching others to care for the environment.

> Teach the Indian and make him understand the indispensable necessity of our forests. Compliment the tourist [that is] reforesting lands turned into wastelands. Teach children the value and necessity of the tree.[81]

Though the ad stressed the need for cooperation, it also implied that like the child and the tourist, the indigenous person was not a full citizen. This reflected elites continuing discomfort with the majority indigenous population and their belief that changing agricultural practices was an important element in a larger project that sought to transform the Maya into appropriate citizens. The role of education in agrarian modernization will be explored in greater detail in the following chapter, but reformers frequently invoked the threat of disaster to secure their conservation goals.

The government discourse about deforestation and soil erosion continually invoked the threat of landslides and starvation as justifications for conservation regulations. Few areas attracted as much attention as the town of Panajachel, which was frequently cited in the *Revista Agrícola* as an example of deforestation run amuck threatening the town with disastrous landslides. Panajachel, one of the larger villages on Lake Atitlán, was also the main point of access to the scenic lake. Agrarian modernizers identified the Lake region as an area where indigenous campesinos, with some help from insects, had destroyed valuable forests of pine and cypress. One article concluded that, "[A] large part of these lands the Indians use to cultivate maize, no matter if the crop is anti-economic and that conditions are truly difficult for the harvest, including planting on hillsides with inclines of 85%."[82] Deforested lands were subjected to strong winter storms that began in May and ended in October. Throughout the winter, tropical

[81] "Ciudadanos," *Revista Agrícola* July-December 1946, 269.
[82] "Seccion de Forestacion y Conservacion de Suelos: Erosión y Deforestacion en Panajachel, Medidas para Contrarrestarlas," *Revista Agrícola*, August-September 1945, 547.

rains falling on exposed fields created rills and gullies, allowing soils to be swept quickly downhill and eventually into the Lake. Often the most intense storms came late in the season, when the ground was saturated with water and this heightened the risk of landslides and flooding.[83]

The Ministry of Agriculture encouraged farmers to begin remediation efforts immediately, advocating a mix of contour terracing, windbreaks and reforestation. The editorial ended with images that showcased recent landslides and deforestation in the Panajachel area, including a photo of a field with a 75% slope that "has been swept by the axe as it could not have been by a cyclone: no signs of the forest remain."[84] The caption blamed indigenous farmers who, lacking education and tied to tradition, preferred to "employ triple the effort in cultivating maize, where the natural laws are shouting their dissatisfaction…Man is cultivating his own ruin."[85] Later in October 1945, while promoting the success of its reforestation campaign around Panajachel, the Ministry emphasized the continued threat posed by unruly campesinos. The axe and the "eagerness to harvest cobs on steep slopes" had destroyed the pine and cypress forest, exposing the ground to the rains that "write in the naked earth signs of death and desolation." [86]

Throughout the 1940s, the Ministry of Agriculture and the *Revista Agrícola* continued to use Panajachel as a cautionary example of deforestation run wild. Well placed advertisements reminded readers of the connection between traditional agriculture, deforestation and starvation. One ad featured a cartoon of Death looming over a deforested landscape. A series of tree stumps littered the ground, with an axe buried into one stump that bordered the edge of a rapidly eroding bank. The headline read "Dark Prophecies for the Future" and the caption warned readers that deforestation led to "hunger and desolation." To avoid catastrophe, the advertisement urged Guatemalans to join the Ministry of Agriculture's conservation campaign. The following page featured a drawing of treeless slopes, riddled with gullies, surrounding a raging river. The caption read: "Don't repeat the case of Panajachel."[87] This warning would prove prescient, as

[83] For more on landslide dynamics, including the link between flooding and landslides caused by saturation of soils. United States Geological Service, "Landslide Types and Processes," Accessed February 1, 2017. http://pubs.usgs.gov/fs/2004/3072/fs-2004-3072.html

[84] "Sección de Forestación y Conservación de Suelos," *Revista Agrícola*, August-September 1945, 550. Efforts to control soil erosion also occurred in well-settled regions like the slopes of the Agua Volcano bordering Antigua. "Medidas Dictadas Por la Direccion General Forestal, Para Evitar Los Deslaves Que Viene Ocasionando la Siembra de Cereales en las Alturas del Volcan de Agua," *Revista Agrícola*, August-September 1945, 554.

[86] "Reforestacion en Panajachel" *Revista Agrícola*, October-December 1945, 781.

[87] "Campaña Forestal," *Revista Agrícola,* October-December 1945, 805-806.

Panajachel was one of the main victims of devastating floods and landslides in 1949 which wrought tremendous damage across the South Coast (Figure 6).

Though the Ministry of Agriculture identified deforestation around the Lake region, they were too focused on the potential economic consequences of soil erosion to grasp the underlying causes. The Ministry of Agriculture considered reforestation around Atitlán especially urgent because the region was a popular tourism destination. Visitors came to appreciate the beauty of the lake region, described by Aldous Huxley as Lake Como "with the additional embellishment of several immense volcanoes."[88] One of the draws for tourism was the visibility of traditional indigenous communities, who lived from fishing, making crafts and intensive horticulture. Yet the growth of tourism around the Lake slowly displaced indigenous communities, forcing them to cultivate land above the picturesque towns on the lake shore. This demographic shift unfolded over decades but the environmental changes to the Lake region began to manifest themselves quickly.

Figure 6: A view of Panajachel, destroyed by floods caused by deforestation.

Sol Tax, an anthropologist who worked Panajachel between 1935 and 1941, offered an important counterpoint to the government's narrative of milpa as a destructive monoculture. He

[88] Aldous Huxley, *Beyond the Mexique Bay: A Traveler's Journal*, (London: Chatto & Windus, 1950), 139.

emphasized the attention indigenous farmers paid to soil fertility and their preference for diverse fields that balanced marketable crops like coffee and onions with corn and other crops consumed by the household. "One point is clear," wrote Tax, "that while they do not always succeed, the Indians consciously try to get as much from the soil as possible, in a definition that includes long-term considerations."[89] His description of indigenous farmers revealed them to be inquisitive, knowledgeable about their local growing conditions, and quick to embrace new crops and technologies provided they made sense economically. Mayan farms were functional, even productive, but inequality and land shortages forced campesinos to shorten fallows and, where possible, open new land so that they could continue to produce food. Over time, this forced intensification stressed soils and campesinos had to supplement their declining milpa yields with waged labor. [90] Where deforestation and soil erosion existed, they were caused by poverty and discrimination that limited the Maya's access to fertile land. Modernizers, however, struggled to escape the racial discourse that blamed Mayan milpa.

The Cradle of Poverty

Shortly after the Revolution, the Ministry of Agriculture began searching for new commodity frontiers where they could stimulate alternative exports like henequen, cotton and hybridized corn. Modernizers initially hoped that the perennially poor Oriente could be transformed into a new zone for export agriculture. They blamed endemic rural poverty on corn production, which returned meagre yields in the arid departments of El Progreso and Zacapa. The Ministry of Agriculture encouraged campesinos to adopt henequen or relocate to nearby departments where land was more plentiful and better suited to corn production. Even as the government encouraged campesinos to move, modernizers dreamed about the productive potential of large-scale irrigation in the Motagua Valley. They hoped that this technical intervention would liberate fertile soils, transforming the Valley into a hotspot for sugar and cotton production. However, their lofty aspirations were defeated by local environmental factors. Though government agents emphasized the destructiveness of corn production in the region, deforestation in most important agricultural zones was a by-product of export agriculture. The

[89] Sol Tax, *Penny Capitalism: A Guatemalan Indian Economy*, (Washington, D.C.: U.S. Government Printing Office, 1953), 131.
[90] Ibid., 21-22. For indigenous reluctance to sell land, see Tax, *Penny Capitalism*, 69-70.

failure of modernization initiatives in the Oriente, refocused government attention on the Pacific Coast as a new region for development.

In 1949, Felícito Carranza, a regional Inspector of Forest Rangers, penned a long letter that warned government officials about the link between rural conflict and environmental degradation in El Progreso, one of Guatemala's poorest departments. El Progreso was in the arid interior—the region referred to by Nicanor and Juan Arrivillaga—where scant rainfall hastened desiccation and desertification of the already limited arable land. Carranza cited several cases where displaced indigenous communities were engaged in protracted land disputes with ladinos.[91] These land disputes dated to the 19th century Liberal Reforms that enabled ladinos to appropriate land historically used by indigenous communities. However, the competition for precious soil and water resources was especially intense in El Progreso. Carranza warned that confrontations over limited land would continue unabated unless the state intervened with a definitive solution to land scarcity.

Carranza eschewed direct legal confrontations with ladino landowners and he instead encouraged the government to resettle indigenous communities in El Progreso. He argued that campesinos were often trapped in a spiral of poverty, investing considerable time trying to make marginal land productive. "Farmers," wrote Carranza, "fight with nature to obtain basic grains ["granos basicos"]…they risk personal efforts to obtain their daily sustenance. From there depends above all the poverty that is observed among them, because they barely produce for themselves…Thus it bears repeating the proverb that says: "LANDS WITHOUT PRODUCTION, CRADLE OF POOR PEOPLE."[92] Carranza advised the government to relocate campesinos to the border of Jalapa, a neighboring department where lumber and land was more abundant. He believed this would stop land conflicts—an assessment that dismissed the cultural importance of land—and stem the growing malnutrition crisis in El Progreso.

Carranza invoked the threat of imminent disaster to bolster his argument for relocation. He estimated that 90% of the population of El Progreso was malnourished. When Carranza

[91] In the municipality of San Agustín Acasaguastlán, the military had to intervene several times to prevent bloodshed between ladino landowners and displaced indigenous communities. Meanwhile, in the municipality of San Antonio La Paz, the indigenous community and landowners were engaged in a pitched legal battle that had lasted over 50 years. While they had avoided confrontation and bloodshed, both sides alleged that a mysterious interloper was intentionally preventing legal resolution to the dispute.
Felicito Carranzo O, "Proyecto de Obras de Positivo Progreso Que Pueden Sacarse Avante Mediante la Cooperacion de las Juntas Muncipales del Departamento de el Progreso." April 16 1949. Min Ag. Leg. 421. AGCA, Guatemala.
[92] Ibid.

visited local schools, he met poorly clothed and emaciated students and he encouraged the state to establish new Comedores Infantiles in the region, spaces where children could access affordable food.[93] Carranza's letter was marked by genuine concern for the well-being of campesinos in the region, but he focused on corn as the main cause of hunger and soil erosion. He called maize the "monoculture that has caused the ruin of so much land that today lies abandoned for lack of foresight" and encouraged the state to promote modern, market-oriented agriculture. Carranza wrote:

> Of what use is it to the farmer to plant in large extensions if his crops don't give yields in the expected proportion. This happens in all the zone where the poor campesino exhausts efforts to plant the largest extension they can, but with bad production results. This error should be avoided while a basic [principle of] agriculture is being introduced, that is, plant little and produce more.[94]

He proposed that abandoned and unproductive land throughout El Progreso should be dedicated to crops that balanced market potential with environmental suitability. He argued that the rugged land in the Department was well suited to henequen and sisal, drought tolerant and low intensity fiber crops that were used to make rope and twine for export.[95] Carranza believed henequen could help this neglected region of Guatemala, opening up a "new industry with which they can defend themselves in the future."[96] Meanwhile, the Motagua Valley would be fully transformed into export zones specializing in industrial-scale cotton and sugar production.

Carranza promised that modern and efficient plantations would transform El Progreso from a place of penury into one of plenty. However, he underestimated the importance of

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[93] He also encouraged the government to increase milk distribution and suggested that the United Fruit Company could contribute with free bananas for children. Patty Harms explores the development and spread of *Comedores Infantiles* throughout Guatemala City and more limited presence in some Departments including El Progreso (1946), Jalapa (1950), and Zacapa (1951). She argues that the movement, initiated by leading women in Guatemala including the wife of Arévalo, led to the formation of a school of social work under the auspices of IGSS. Moreover, the state saw the *Comedores* as a tool to address rural poverty and challenge the conservative Catholic Church's commitment to addressing the structural basis for poverty. Patricia Harms, "Imagining a Place for Themselves: The Social and Political Roles of Guatemalan Women, 1871—1954," PhD Dissertation (Arizona State University, 2007), 190-197.

[94] Carranza's injunction closely mimicked INFOP's development mandate "Produce more and live better" which will be discussed further in Chapter 4. Carranza, "Proyecto de Obras de Positivo Progreso," Min Ag. Leg. 421. AGCA.

[95] Felicito Carranza had been promoting henequen as a possible replacement for corn in Guatemala's Oriente since 1946. Felicito Carranza O., Inspector de Guardias Forestales, March 1946, Min Ag. Leg. 421. AGCA. Guatemala.

[96] His enthusiasm was likely inspired by the boom in the Yucatan, but the timing was not good. The henequen market began to decline in the 1930s because of market conditions, synthetic competition and changes in combine technology. Sterling Evans, *Bound in Twine: The History and Ecology of the Henequen-Wheat Complex for Mexico and the American and Canadian Plains, 1880-1950* (College Station: Texas A&M University Press, 2007), Chapter 7; Felicito Carranza O, "Proyecto de Obras de Positivo Progreso," Min Ag. Leg. 421. AGCA.

campesinos, who produced 40% of the region's corn on a third of the arable land in El Progreso. These small farms were not incredibly productive, but campesinos played an important role in food production.[97] Moreover, contemporary reports indicated that export agriculture was indirectly responsible for significant deforestation that gave the region its distinctive, barren landscape. The region he proposed to develop was known as the "forest of thorn," because of the abundance of cactus, spiny trees and arbutus. This vegetation became widespread after railway transportation opened up the region for development and lumber extraction.

In a report on the state of Guatemala's forests published in 1950, ecologist Lesley Holdridge argued that vegetation throughout the Motagua Valley was transformed when the railway was built connecting Guatemala City with Puerto Barrios.[98] The area was original covered by a mix of savannas and tropical deciduous trees. Many native trees were felled for their high quality, durable and resistant wood that was used as lumber and cross ties for the railroad. Holdridge concluded that "men completely extracted the most valuable species" from this now accessible forest and caused irreversible changes to the landscape.[99] Though peasants did contribute to deforestation, Holdridge's analysis reveals that the process was significantly accelerated by the construction of a railroad meant to connect Guatemalan coffee and banana plantations with the port of Puerto Barrios.[100] Carranza praised the efficiencies of market

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[97] Simmons, et. al., "Classificación de los Suelos de Guatemala," 83, 95-96.

[98] Holdridge, *Los Bosques de Guatemala*, 11-12. This report was commissioned by the Institute for Encouraging Production, an organization we will discuss in Chapter 4. Holdridge's presence in Guatemala, like that of Simmons, Vogt, McBryde, and Tax suggested the region's importance for the development of knowledge about the tropical world. He first published on Holdridge life zones in 1947 and revised this theory 1967. It continues to be used as a way to predict and map vegetation types based on soils and climate factors, including precipitation and evotranspiration. See L.R. Holdridge, "Determination of world plant formations from simple climatic data," Science 105 (1947) 367-368; L.R. Holdridge, *Life Zone Ecology.* (Tropical Science Center, San José, Costa Rica), 1967. For recent use of this approach to examine the links between climate change and forest cover, see Khatun K, Imbach P, Zamora JC, "The Implications of Climate Change Impacts on Conservation Strategies for Central America using the Holdridge Life Zone (HLZ) Land Classification," *iForest* 6: (2013), 183-189. Accessed May 8, 2014. http://www.sisef.it/iforest/ contents/?id=ifor0743-006

[99] *Los Bosques de Guatemala*, 10. By facilitating access to formerly remote regions, railways transformed forested landscapes, consuming wood for ties, fuel, and stimulating production of export crops like sugar and bananas. For examples John Soluri, *Banana Cultures: Agriculture, Consumption, and Environmental Change in Honduras and the United States* (Austin: University of Texas Press, 2005) and Reinaldo Funes Monzote, *From Rainforest to Cane Field in Cuba: An Environmental History Since 1492* (Chapel Hill: University of North Carolina Press, 2008).

[100] A 1939 report by Agricultural Inspector Manuel Antonio Archila, emphasized the connection between poor land use and local market pressures. In the hills of neighboring Jalapa, Archila noted that wheat grown for sale to El Progreso, Zacapa, and to a lesser extent El Salvador was responsible for the destruction of forests in the mountains of Jalapa, Tobón, and Portero de Carillo, ranges that bordered the Motagua Valley. He accused indigenous farmers of clearing land and moving on after a few years. This process had "reduced to smoke and ash the natural wealth of these mountains" burning away stands of cedar, nogal, sapuyul and pine. M. Anto Archila to Secretario de Estado, Despacho de Agricultura y Caminos. January 23, 1939. Min. Ag. Leg. 1911. AGCA. Guatemala.

production, but the expansion of modern export agriculture was directly responsible for the poverty and deforestation he sought to solve.

Holdridge recommended that agriculture should be limited to the basin of the Motagua Valley so that reforestation could occur naturally on the margins of the valley. This answer was only partly satisfactory to Guatemalan modernizers who believed that the region had great economic potential which could be realized if locals followed expert advice. The government believed that the hills around the Valley should be seeded with henequen plants, because they anchored the soil and boosted campesino revenues.[101] The fertile Motagua Valley was promoted as an ideal frontier for export agriculture and the state hoped to unleash the region's potential through agricultural modernization. The valley was the object of multiple studies between the 1930s and 1950s, which proposed irrigation to facilitate the expansion of agriculture in the dry region. An early report by J.G White Engineering projected that upwards of 16,000 acres between El Rancho and Zacapa could be irrigated fairly easily. They noted that though the soils were deficient in organic matter and nitrogen, after an initial application of 500 pounds of fertilizer per acre and the use of legumes, farmers would be able to plant lucrative cash crops like cotton and sugar.[102] The environmental constraints including soil quality and precipitation were frequently overlooked or minimized by a subsequent report by the Ministry of Agriculture.

The Ministry promoted sugar and cotton in the region, envisioning an agro-industrial landscape with refineries constructed close to fields. This new agrarian landscape left little room for corn, which was to be cultivated in the margins of irrigated land and would be displaced once cotton and sugar refineries were fully operational. "[A]s the capacity of these mills grows," concluded the Ministry, "adjacent lands will be planted with cotton or sugar, to secure better economy of management and supervision.[103] Growing excitement about the prospect of opening a new region of agrarian production through irrigation was dampened in 1953. Commissioned by the IAN and the Ministry of Agriculture, USDA technician Charles Simmons created a map of

[101] The Yucatán's experience with henequen indicated that intensive henequen production still caused deforestation and heightened rural inequality. Sterling Evans, "King Henequen: Order, Progress, and Ecological Change in Yucatán, 1850-1950," in *A Land Between Waters: Environmental Histories of Modern Mexico*, ed. Chris Boyer (Tucson: University of Arizon Press, 2012), 150, 161.
[102] Though undated, references to construction of new rail lines and the use of data collected during a 1927 drought suggest the report was produced for the Ubico administration. J.G. White Engineering Corporation, Engineers and Constructors, "Reporte del Proyecto Para la Irrigación Y Suministro de Fuerza Electrica en Los Llanos de la Fragua," n/d. Min Ag. Leg 421. AGCA. Guatemala.
[103] "Proyecto de Motagua," n/d. Min Ag. Leg 421. AGCA. Guatemala.

soil types in the Llanos de la Fragua, the region of the Valley where irrigation was proposed. Simmons revised earlier estimates of irrigable land downward and he found that only 13,158 hectares were nominally viable. This region was made up of an enormous variety of soils: some had high salt levels that could destroy irrigated crops and other areas had such poor drainage that ground with standing water was completely dry just 6 inches below the soil.[104]

The report concluded that despite the great hope and speculation about the agricultural riches of the Valley, only 30% of available the land was easily irrigated. That number rose to 40% if one included lands that required levelling and terracing. Simmons anticipated that nearly 27% of the lands would require several years of intensive remediation, and the rest was almost entirely unfit for agriculture and should be reforested.[105] The state did not abandon hope that the Motagua Valley could be opened to agriculture but they were forced to proceed more slowly, establishing experimental research stations where the irrigation techniques could be tried.[106] Though plans for the rapid development of the Motagua Valley were checked by material realities, Guatemalan agronomists continued to tout the transformative potential of fiber crops like henequen, sisal and agave.[107]

In 1949, the Director General of Agriculture Hector M. Sierra tried to stimulate fiber crop production throughout rural Guatemala. Working with U.S. authorities, he arranged for 10,000 sisal plants to be imported from Haiti.[108] Citing Haiti's recent success with the crop, Sierra believed that sisal could turn practically uncultivated or marginal lands into productive farms that respected El Progreso's ecological limitations. The Ministry encouraged production by offering plants for free and they rewarded adopters with prizes. Small farmers who planted one hectare of sisal were offered five quintales of maize or the equivalent in money. This was an effort to ease the transition to market production for subsistence-oriented campesinos.[109]

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[104] "Establecimiento de un Ensayo Piloto de Irrigacion en los Llanos de la Fragua," n/d, Min. Ag. Leg 421, (AGCA).
[105] Report by Charles Simmons to Julio Morales Barrios, Sub Secretary of Agriculture, November 6, 1953, Min Ag. Leg. 421, (AGCA). This report confirmed the early concerns raised by Zeissig and Nuñez Aguilar who were concerned about the high cost of the irrigation project relative to the amount of new arable land it would create. Zeissig, *Paraiso Perdido*, 16.
[106] This research station was supported by the new United States' new body for agrarian development in Central America, SCIDA.
[107] Henequen was commonly used as a shorthand for all these crops. This occurred also in Mexico's Yucatan Peninsula. Evans, "King Henequen," 153.
[108] He first approached the UFCO asking for henequen plants. The company experimented with a wide variety of crops on their plantations in Tiquisate.
[109] Farmers who planted 5 hectares would receive a batch of farming tools worth 50Q; those who dedicated 10 hectares or more would receive free transportation of dry sisal fiber to the Capital for one year, or an equal amount

Sierra was still enthusiastic about the economic potential of fiber crops when he returned to the region for a three-day tour in January 1950. Sierra reported that 15 large landowners in Sanarate promised to plant no less than 5 manzanas, while the owner of the plantation Sabanetas wanted to plant up to 50-60 manzanas. He projected that within three years, the municipality would become the main sisal producer in Guatemala. On the basis of interest in the departments of El Progreso, Zacapa and even Baja Verapaz and Chiquimula, Sierra recommended that the Ministry obtain a further 500,000 plants from Haiti. With this infusion of new plants, Sierra believed that upwards of 200 manzanas of uncultivated land could be planted. Once these plants were established, the Ministry of Agriculture planned to promote their adoption in Guatemala's arid, eastern provinces.[110]

Hector Sierra and Felícito Carranza favored a carefully managed agro-ecological transformation, designed and implemented by experts. Their goal was to remake Guatemala's agrarian landscape so that unruly cornfields were replaced with crops experts deemed ecologically sensible and marketable. In the 1940s, Sierra published an illustrated chart that demonstrated the agricultural commodities produced in Guatemala, arranged by altitude and labeled with the names of key communities. The image presented an orderly, idealized vision of Guatemalan agriculture, where every region specialized in a few crops that benefited the nation (Figure 7). The core conceit of this ambitious plan for rural modernization was that traditional agriculture stranded campesinos in poverty and destroyed the environment. In the context of a wise use discourse about conservation, experts saw indigenous corn cultivation as a waste of Guatemala's fertility.

in money. Hector M. Sierra to Minister of State, Office of Agriculture. September 3, 1949. Min Ag. Leg. 421. AGCA. Guatemala.

[110] Hector M. Sierra to Minister of Agriculture. January 9, 1950, Min Ag. Leg. 421. AGCA. Guatemala.

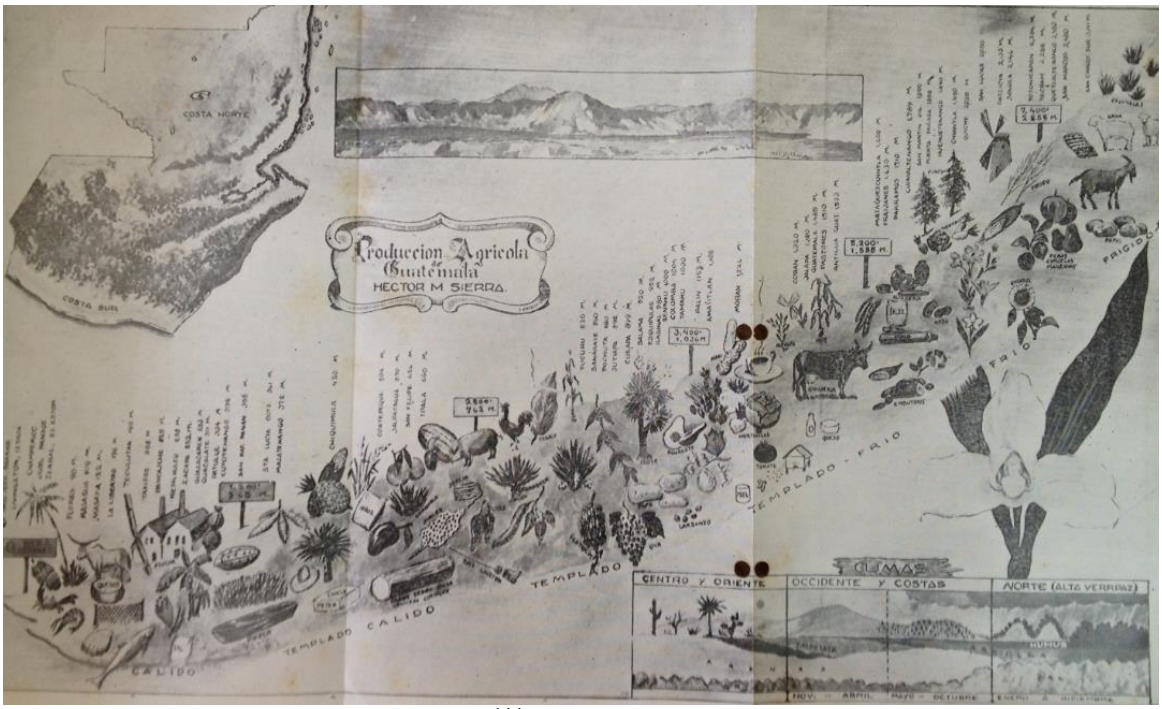

Figure 7: Regional crop specialization[111]

Sierra expounded on his desire to rationalize production—for the good of the nation and indigenous peoples—in a 1949 essay collection celebrating the opening of the Iowa State College-Guatemala Tropical Research Center in Antigua. He approved of the "almost superhuman" tenaciousness of the Maya who originally tamed wild corn but he disparaged indigenous farming techniques as unchanging and unthinking. Sierra wrote that the "Guatemalan Indian does not even bother about where or how he plants his corn, his chief object being to have corn planted that he can take care of as tenderly as a father cares for his children."[112] He believed that this slavish adherence to tradition resulted in low productivity: Guatemala produced only 12 bushels of corn per acre compared to high yields that U.S. farmers secured with fertilizer, mechanization and hybrid seeds. He argued that this situation could be changed through education and extension work.

> The Indian is rooted to the soil in which he lives, whether nature is kind or wild and unruly. To destroy or disorganize brusquely his way of life is impossible. Gradual changes can be made and that is precisely what is being done in Guatemala by

[111] Hector M. Sierra, "Producción Agrícola de Guatemala" in report by Rodolfo Lambour M. "Algunas Consideraciones Para el Fomento de la Fruticultura en el Departamento de Jalapa," August 4, 1951. Min. Ag. Leg. 421. AGCA. Guatemala.

[112] H. M. Sierra, "Corn in Guatemala," *Plant Research in the Tropics: Research Bulletin 371*, ed. I.E. Melhus, (Ames, Iowa: Agricultural Experiment Station, Iowa State College, 1949), 509, 512.

> educational methods, in schools, army posts and by ambulatory missions. The Indian is happy when he grows corn, even though what he calls happiness is to us misery.[113]

Sierra's description accurately described government efforts to reach out to Guatemala's large and largely rural indigenous population. Sierra and many of his colleagues believed strongly in the emancipatory power of education and they demonstrated a genuine interest in the welfare of the Mayan. This was a significant policy shift for the Guatemalan government, which had for decades ignored or actively worked to undermine indigenous communities. However, this renewed attention came at a cost. The government became fixated on transforming the Maya into sedentary, market-oriented farmers dismissing the viability of alternative agricultural knowledge.

Conclusion

In June of 1949, Chilean technical advisor Manuel Elgueta was dispatched to rural Guatemala by the newly created Institute for Encouraging Production (INFOP). Elgueta's task was to report on wheat hybridization experiments being carried out by INFOP and its institutional rival IAN. The latter was working closely with the Rockefeller Foundation and the Mexican Agricultural Program, experimenting with new, rust resistant wheat varieties. After he had evaluated the progress of each program, he turned his attention to the crucial issue of crop adoption. Although Elgueta was a proponent of hybridization, he was sensitive to the geographic and cultural challenges that might limit the appeal of these seeds. Given the key importance of corn as a subsistence crop, Elgueta advised against imposing hybridized seeds on indigenous farmers. He argued that indigenous farmers would not accept a seed that only lasted one year, even if it gave high yields when first planted. Unlike his Guatemalan colleagues, Elgueta believed that the indigenous campesino was a "careful and meticulous farmer who has an innate sense of the value of conservation."[114] Indigenous farmers exercised reasonable caution before they adopted new crops and techniques and carefully managed their limited land and soil to produce reliable yields. These observations challenged the assertions of policymakers, who used indigenous mismanagement of the environment as leverage to modernize Guatemalan agriculture.

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[113] Notably, this harsh conclusion was omitted from the shortened Spanish translation that followed. Sierra, "Corn in Guatemala," 512.

[114] Manuel Elgueta, Report to Instituto de Fomento de la Producción. June 14 1949. p5. Min. Ag. Leg 421. AGCA. Guatemala.

Though Elgueta praised the good instincts of indigenous farmers, he also recognized that their results could be improved with better tools and proper techniques.
He encouraged the state to implement an extension program that taught indigenous farmers the basic principles of seed selection so that they could create their own genetically stable varieties. This approach, he argued, would have an "enormous influence in the economic betterment of the Indian." Elgueta considered extension work in indigenous communities to be of "vital importance," as the state mechanized agricultural production on the South Coast and moved to promote hybridized corn, rice and wheat. Elgueta worried that without increasing the efficiency of highland maize production, indigenous farmers who depended on corn would be unable to compete with cheap grains produced on the coast. Extension work would also help farmers adopt regionally appropriate cultivation practices, minimizing the risk identified by Elgueta that mechanization and other farming techniques appropriate for the flat terrain of the coast would be inappropriately applied to inclined terrain of the highlands.

Throughout the 1940s, state efforts to ameliorate rural poverty repeatedly characterized Mayan farmers as obstacles to rural modernization. By defining traditional corn cultivation in opposition to modern agriculture, policymakers created a caricature of indigenous farmers that bore little resemblance to reality. They repeatedly ignored evidence that indigenous campesinos were engaged and inquisitive farmers, eager to incorporate new agricultural techniques and technologies where they made sense. This selective incorporation of modern technologies did not fit well with the grandiose visions of rural reform that Sierra and his colleagues promoted. Modernizers predisposed to dismiss Mayan knowledge ignored the logic of traditional maize cultivation and instead saw a countryside gripped by chaos and confusion. They predicted that deforestation would lead inevitably to soil erosion, landslides and widespread hunger. Conservation offered state planners a viable, even progressive, reason to contemplate wholesale resettlement of communities. The government tried to use conservation to transform the Maya into citizens who rejected the traditionalism and parochialism of the peasant life and embraced the modern life of the market farmer.

The grandiose aspirations of the agrarian modernizers were quickly undone by political and geographic realities. The case of the Motagua Valley demonstrates the environmental constraints that slowed down modernizing ambitions. During the Arévalo administration, the Ministry of Agriculture struggled to establish its presence throughout rural Guatemala. When

government agents, scientists and technicians visited the far flung reaches of Guatemala they were frequently confronted with the limits of their knowledge and the depths of their prejudices. The following chapter analyzes how extension work challenged accepted ideas about the Maya and revealed the need for more substantive rural reform.

Chapter 3: The Limits of Agricultural Extension

In February of 1945, the newly elected President Juan José Arévalo called for regional meetings that would bring together workers, capitalists, and the government to discuss the problems facing Guatemala. Arévalo told the nation, "We have to start from the beginning. And the beginning is to investigate."[1] The first meeting was convened in Escuintla, the largest Department on the Pacific Coast. Each municipality sent delegates representing large landowners and workers who reported independently on issues hindering economic growth and social equality. The Congress put forward 76 recommendations, which represented a vision of economic development that attempted to balance economic growth with equitable rural development. There was broad agreement on some issues, including the need to raise minimum wages, curb alcoholism and build water sanitation infrastructure. However, there was protracted debate about a government proposal to control the price of agricultural goods to ensure a "more just and equitable" economy.

César Godoy Urrutia, a Chilean Parliamentarian and educator, intervened in the debate between landowners, labourers and the government and offered an extended justification for price controls on important crops.[2] He cautioned that the decision placed the Arévalo government at a difficult "crossroad" between landowners who demanded absolute liberty and "the most defenseless sector of the nation" including campesinos and workers. The Commission on Economy and Labour eventually recommended that price controls be adopted, but the decision reflected the tensions that characterized agrarian modernization throughout the Revolutionary-era. Though there was broad consensus that agriculture had to be reformed, modernizers disagreed about the best approach with some emphasizing rural education and others lobbying for more radical rural interventions including financing projects and land reform.

Moderate reformers championed agricultural extension work that educated farmers about new techniques and crops, because it promised to improve rural productivity without challenging the existing socio-economic order. President Arévalo followed this moderate path and pledged to

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[1] "Annex 1," *El Triángulo de Escuintla: El Estado, El Capital, Los Trabajadores*, (Guatemala, C.A.: Tigografía Nacional, 1946), 5.

[2] He served as a Parliamentarian for the Socialist Party from 1937 to 1949. He helped found the Chilean Socialist Party in 1933 and then the Chilean Communist Party. He then returned to parliament as member for the Chilean Community Party from 1961-1969. "César Godoy Urrutia," *Reseña Biográfica Parlamentaria: Historia Política Legislativa del Congreso Nacional de Chile*. Accessed February 27, 2017. http://historiapolitica.bcn.cl/resenas_parlamentarias/wiki/C%C3%A9sar_Godoy_Urrutia

increase rural productivity by motivating campesinos who felt excluded from the nation, but his solution favored rhetoric over reform.[3] "The problem," state Arévalo, "is that the campesinos have lost their desire to till the soil because of the attitudes and politics of the past."[4] The President's ambivalence on rural reform was shared by many other moderates among the Revolutionary government and the Guatemalan elite. The country's governing and economic elite were mostly ladino and there was widespread apprehension that giving indigenous communities too much political freedom and economic power might lead to rural revolt and chaos. This tension was especially acute at the beginning of the Revolution, when the rhetoric of the movement spurred campesinos in the countryside to push for land and better labour conditions.[5]

Like Mexico and other countries engaged in the Green Revolution, the Arévalo administration used agrarian modernization—with its promise of heightened productivity through new technology—to defuse rural tensions.[6] This emphasis on technical fixes for structural problems, deferred action on social and economic issues that caused some of Guatemala's pressing environmental issues including soil erosion and deforestation. The Ministry of Agriculture created General Agents of Agriculture as "apostles" in the government's fight against soil erosion and deforestation. They travelled widely throughout Guatemala's countryside, establishing new experimental farms and demonstrating the benefits of modern agriculture. Policymakers hoped to awe campesinos with the abundant yields that could be obtained with new productive technologies: fertilizers, pesticides, hybrid seeds and mechanization.

Agents, and the local Committees for Agriculture they created, quickly transcended their initial purpose and became important instruments for the state to exercise influence in the countryside. Their reports offered detailed insight into the complex financial and political

[3] As Cindy Forster notes, under Arévalo the Revolution "suffered from an absence of action and a surfeit of rhetoric." Forster, *The Time of Freedom*, 5.
[4] Piero Gleijeses, *Shattered Hope: The Guatemalan Revolution and the United States, 1944-1954* (Princeton: Princeton University Press, 1992), 47.
[5] The widely publicized 1944 massacre of ladinos by the indigenous majority in Patizicía haunted ladinos throughout the Revolution. Jim Handy, "'A Sea of Indians': Ethnic Conflict and the Guatemalan Revolution, 1944-1952," *The Americas* 46, no. 2 (1989): 193-197. For an example of rapid rural mobilization among indigenous workers in San Marcos see Forster, *The Time of Freedom*, 154-153.
[6] Joseph Cotter, *Troubled Harvest: Agronomy and Revolution in Mexico, 1880–2002* (Westport, CT: Praeger, 2003); Nick Cullather, *The Hungry World: America's Cold War Battle Against Poverty in Asia*, (Cambridge, Mass.: Harvard University Press, 2013), Chapter 1.

problems restricting agricultural growth. Campesinos and small farmers circumvented local authorities by addressing complaints to agents, who relayed them directly to the Minister of Agriculture. This reinforced the perception that the Arévalo administration was acting on behalf of the rural population, often subverting established rural elites who controlled the Municipal and Departmental government. Agents worked closely with campesinos and this experience often forced them to question the simplistic racial stereotypes that animated the conversation around deforestation and soil erosion.

As they learned to listen to the rural population, some agents began to question the limits of technical aid as a tool for rural development. These more progressive agents challenged the idea that increased productivity was the only factor necessary to secure improvements in social welfare for Guatemalan campesinos. Instead, they encouraged the government to undertake sweeping rural reforms that democratized banking, markets and land tenure. These suggestions provoked contentious debate in Guatemala City between proponents of technical aid and those who supported more aggressive development policy. This impasse eventually led to the creation of a new rural development organization, the Institute for Encouraging Production (INFOP), a semi-autonomous government agency that integrated extension work and research. The new government agency implemented an ambitious and progressive rural development agenda focused on the financial, technological and political barriers to modernization.

"The Campesino Hears with His Eyes"

At the beginning of the Arévalo administration, modernizers identified two major problems holding back Guatemalan agriculture. First, policymakers believed milpa cultivation caused deforestation, soil erosion, and declining yields. The second problem was Guatemala's continued dependency on coffee cultivation. The editors of *Revista Agrícola* disclosed their embarrassment that Guatemala continued to squander her agricultural potential when less fertile countries used modern techniques to make arid and unpromising lands productive. "[A]mong us," they wrote, "apathy and abandon is the fashion. If a monoculture collapses discouragement spreads. We are accustomed to earning huge percentages on coffee, if this declines we are also ruined. This is illogical." Though diversification had been attempted many times before, they argued that previous efforts failed because there was little effort to engage campesinos.[7] They

[7] "Sección Editorial: Perspectivas Incalculables para la Agricultura en Guatemala," *Revista Agrícola*, January 1945,

believed that encouraging Guatemalan campesinos to participate in the market would expand the range of commodities produced and stimulate the domestic economy.

The editors of the *Revista Agrícola* encouraged the government to establish new experimental farms where researchers could adapt western agricultural practices and crops to Guatemala's diverse production zones. Experimental farms were excellent showcases where agronomists could demonstrate to campesinos the increased yields that could be secured through modernization. "First-hand knowledge," they wrote, "[was] the only thing able to direct toward improvement the twisted campesino ideology ["la torcida ideología campesina"], tenaciously rooted by many decades of uncertainty." Guatemalan modernizers believed that these farms had to be complemented by an aggressive expansion of agricultural extension and outreach. The editors insisted that campesinos would not adopt any new techniques or technologies unless they were certain it would work and only careful demonstration would reassure them. This entirely sensible position was dismissed by editors as evidence of the stubborn irrationality of peasants, but they nevertheless encouraged the state to invest heavily in agricultural extension. "Their ears will close," wrote the editors, "to any preaching and all insinuation that is not accompanied by a palpable demonstration: the campesino hears with his eyes."[8]

The Ministry of Agriculture began creating new experimental farms almost immediately after the Revolution. In 1946, the Department of Extension and Agrarian Development informed the Instituto Agropecuario Nacional (IAN) that they were working to establish outposts in distinct agricultural regions across the country. Given the formidable geographic variation within Departments, some regions had several experimental stations where seeds and growing techniques were adapted to local conditions.[9] The local variations in soils and climates, made experimental research stations vital as controlled showcases of state power that inspired farmers with visions of abundance that were often difficult to replicate in the field.[10] However, the expansion of experimental research stations depended heavily on extension agents, who were dispatched to rural Guatemala where they built relationships with large landowners and

99-100; "Sección Editorial: Terreno Abonado Para Obra Constructiva Agrícola," *Revista Agrícola*, February 1945, 184.

[8] "Valor Teórico y Real de Los Campos Experimentales," *Revista Agrícola*, January 1945, 101-102.

[9] Letter to Director of IAN, Dr. William C. Davis at La Aurora. Sept. 12, 1946. Min Ag 1887. AGCA. Guatemala.

[10] Stuart McCook argues that experimental research stations in Puerto Rico and Cuban often served the interests of export agriculture, although he observes that there was a more populist shift in agricultural sciences during the 1930s in countries like Columbia. McCook, *States of Nature*, 63, 67, 138.

campesinos. These relationships formed the basis for the establishment of agricultural research centers throughout the country.

Created by the Ministry of Agriculture's Department of Extension and Rural Development in 1946, General Agents of Agriculture were the embodiment of the more practical approach to technical advice endorsed by the *Revista Agrícola*. Agents were to gather information about the countryside, establish state oversight and promote agrarian modernization. Their founding document called them "apostles" and they were given an appropriately grandiose mandate to evangelize modern agriculture production amongst Guatemala's farmers, large and small. As "peripatetic agricultural teachers," they were expected to travel widely in their designated Departments. They offered farmers and campesinos advice on crop production and soil conservation, but this was only a small part of their mission. They also helped organize Committees for Agriculture, Livestock and Rural Industry, groups of influential farmers who were supposed to facilitate the adoption of new techniques and technologies.

Agents were also supposed to educate farmers about rural economy, farm administration and encourage more efficient labour practices.[11] Their charter emphasized that most farmers had little business acumen, and often lost money to middlemen who offered low prices for their crops. Agents were to remind farmers of the "economic function of the agricultural enterprise."[12] Though extension agents focused on increasing productivity through technical and financial reforms, they were also conceived of as agents of moral reform. Their charter warned agents that farmers would rudely question and even resist new techniques, because of their misplaced confidence in personal observations.[13] They were instructed to keep faith when confronted by resistant farmers, because they were "pioneers in the great work to be realized."[14]

Their most important task was to educate campesinos about the destructiveness of traditional agriculture. General Agents of Agriculture were described as "apostles of this crusade for the defense of the soil, the water, the tree" and their charter focused on soil erosion as the cause and consequence of Guatemala's agrarian malaise.

> The loss of fertility, the ruin of farm soil, the scarcity of water, changes in climate and modification of the seasonal regime, dust storms, floods because of water overflowing without restraint, and other calamities which are the fruit of carelessness and ignorance,

[11] Article 24 "Reglamento de los Agentes Generales de agricultura," n/d. Min Ag. 1887. AGCA. Guatemala.
[12] "Agentes General de Agricultura." December 1946. Min Ag Leg 1887. AGCA. Guatemala.
[13] Ibid.
[14] Article 24 "Reglamento de los Agentes Generales de agricultura," n/d. Min Ag. 1887. AGCA. Guatemala.

> [and] the consequence of this tragedy that implies the vengeance of nature and that man is responsible.[15]

To confront this danger, agents were encouraged to intervene forcefully in rural affairs. In essence, their charter asked a small handful of individuals to catalyze systemic changes in an entrenched agrarian system. Instead, agents lobbied for small, incremental changes that mitigated, but did not solve, falling productivity and social inequality. Like the farmers they sought to help, agents lacked the tools—specifically the ability to craft national laws and enforce national policies—to rectify the disequilibrium in land tenure that was causing underproduction, deforestation and soil erosion.

Although agents ultimately proved unable to transform agrarian relations, their travels greatly expanded state knowledge and authority in the countryside.[16] Article 21 of their charter instructed them to informally collect information about the countryside and assess the capabilities of the Departmental functionaries gathering official census data. Agents gathered information as they travelled through rural Guatemala, giving workshops that demonstrated the value of modern agricultural techniques. Their bi-monthly reports did not deviate far from the discourse of modernization, commenting on soil erosion, the demand for mechanization, the need for seed selection and a shortage of fertilizers. The prominence of fertilizers in the reports indicates their value as a promotional tool that visibly boosted yields and demonstrated modernization's productivity to recalcitrant converts. However, farmers who experimented with fertilizers found that they were costly and the promised increases in yield were difficult to sustain without technical assistance.

In September of 1946, the Agent for the Department of Guatemala extolled the "magnificent" results of fertilizers in his region, but also in Baja Verapaz, Escuintla, Antigua, and Chimaltenango. The agent reported that in typical fields, up to 50% of the milpa dried out during an unusual 28-day stretch without rain. However, fields that had been fertilized and plowed barely suffered any loses. "This work," claimed the agent, "has awakened much interest among farmers in the region."[17] Though farmers and campesinos expressed interest in fertilizers,

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[15] Article 23 "Reglamento de los Agentes Generales de agricultura," n/d. Min Ag. 1887. AGCA. Guatemala.
[16] Information collection was another part of their mandate, reflecting the lack of official knowledge about the countryside the state sought to transform. See Article 21, "Reglamento de los Agentes Generales de Agricultura." n/d. Min Ag. 1887. AGCA. Guatemala.
[17] In the town of El Cortijo, San Miguel Petapa, he demonstrated how to fertilize and plow up a small farmer's field: 4 ½ manzanas planted with corn and a ½ manzana planted with Piloy, a large bean grown in highland Guatemala.

many questioned their utility in comparison with established crop rotations and green fertilizers. This was certainly the case for Felipe Hernández, a vegetable farmer in Ciudad Vieja in the Department of Sacatepéquez who complained that his crops were badly damaged by over-application of fertilizers. The local agent blamed Hernández for not following instructions, but he assured his superiors that the crop had been saved by his personal intervention.[18] The technology that promised to emancipate farmers from physical limitations on production also forced them to rely on agronomists and agricultural agents who used their leverage over farmers to encourage them to change their cultivation habits.

As they travelled through a very diverse landscape, extension agents tried to follow Hector Sierra's suggestion that agriculture should be organized rationally. They evaluated local soils and topography and recommended changes in local farming practices that were almost always focused on replacing corn with more commercially viable crops like wheat and cotton.[19] In November of 1946, the Agent for Chimaltenango visited the Finca Las Canoas in San Martín Jilotepeque where he found extensive fields of corn and beans that he designated a "monoculture." He insisted that the administrator should diversify and plant sugar or coffee, as some nearby producers had already done.[20] In the same month, the Agent for Jutiapa reported his efforts to discourage bean production in Atescatempa, close to the border with El Salvador, where large surpluses of beans had accumulated. He encouraged farmers to make better use of their land by planting wheat and especially cotton, which was in high demand. The changes that Agents demanded were not always implemented, but the Extension Department did not deviate from its message that corn was an antiquated crop that held back small farmers and campesinos.

"Informe de Actividades Del Departamento de Extensión y Fomento Agrícola: Primera Quincena," September 1946. Min Ag 1887. AGCA. Guatemala.

[18] "Informe de Actividades Del Departamento de Extensión y Fomento Agrícola: Segunda Quincena," October, 1946. Min. Ag. 1887. AGCA. Guatemala.

[19] Sometimes traditional export crops were targeted because they were identified as a cause of soil erosion. In San José Acatempa, Jutiapa the agent urged the "principal residents" to abandon tobacco cultivation because the soils were unfit. They were told to grow henequen in the rocky and barren soils around villages in the municipality. The Agent assured farmers that the government would help them transition to new crops with technical assistance and government support. Although the government was enamored of henequen as a new industrial crop, it is unclear how much farmers made from its cultivation and how well the government supported growers. "Informe De Actividades Del Departamento de Extensión y Fomento Agrícola: Primera Quincena," November, 1946. Min. Ag. Leg. 1887. AGCA. Guatemala.

[20] He found 12 caballerias planted in corn and beans. "Informe De Actividades Del Departamento de Extensión y Fomento Agrícola: Primera Quincena," November, 1946. Min. Ag. Leg. 1887. AGCA. Guatemala.

In March of 1947, the Agent for Jutiapa gave 5 conferences to some 80 attendees, where he explained patiently "the necessity of abandoning monoculture."[21]

Cotton, a perennial favorite among modernizers, was heavily promoted by agricultural agents as a natural successor to corn.[22] In December of 1946, the Agent for Jutiapa Isaís B. Hernández met with 26 campesinos in the municipality of Zapotitlán and urged them to adopt cotton. He later spoke to authorities and farmers in El Adelanto and Comapa, where he "made them see that monoculture didn not serve them any purpose and that they should begin new crops, including cotton, wheat, etc."[23] To facilitate the transition to cotton, Hérnandez arranged for ten influential farmers from Jutiapa to visit Finca Torolita, owned by an influential member of the Revolutionary government, Jorge Toriello. Unfortunately, one of the jeep's carrying farmers to Torolita flipped on a bad stretch of road between Guatemala City and Escuintla. Several farmers were sent to the hospital and were unable to visit the Finca where Toriello was using modern techniques to produce cotton. Despite this setback, Hernández continued to evangelize cotton, and to lesser extent wheat, cultivation in Jutiapa.[24] However, the incident demonstrated basic infrastructure challenges that slowed the diffusion of knowledge, technology and crops throughout rural Guatemala. Moreover, agents slowly realized that campesinos found modernization appealing but were hesitant to adopt new crops without financial and material support from the state.

Agents were ideologically prepared for resistance from campesinos that never materialized, but they were often surprised by the indifference of large landowners who were supposed to be the vanguard of modernization. On September 30, 1946, the Agent from Jutiapa reported that he could not find even six farmers willing to form a Departmental Committee of

[21] "Informe De Actividades Del Departamento de Extensión Y Fomento Agrícola: Primera Quincena," November, 1946. Min. Ag. Leg. 1887. AGCA. Guatemala.
[22] The cover image for the April issue featured a cotton boll, pictured on an industrial field. "Sección Agronomía: Algodón," *Revista Agrícola*, April 1945, 358.
[23] "Informe de Actividades del Departamento de Extensión y Fomento Agrícola: Primera Quincena," December 1946, MinAg 1887. AGCA. Guatemala.
[24] See reports for late May and early June 1947, where the agent took a 'census' of those interested in cotton cultivation and distributed wheat seeds to interested farmers. He also encouraged cultivation in regions apt for mechanzation. On the Northwestern edge of Jutiapa, the Agent told the farmers of Quesada to immediately prepare their fields for wheat cultivation because flat land was "ideal for mechanization and fertilizing." The Agent told residents not to burn their fields after harvest, lest their good soil be washed away by the rain. The residents of Quesada responded well to the Agent's suggestions and pestered him with requests for tractors after his presentation. "Resumen de las Labores Desarrolladas por El Departamento de Extensión y Fomento Agrícola: Primera Quincena," June 1947. Min. Ag. 1887. AGCA. Guatemala.

Agriculture. The agent concluded "the majority [of landowners] are retrograde, parochial, and unsociable, for the real farmers are the farm workers who do not have land and are exploited wickedly by the owners of land."[25] He argued that even though landowners controlled the best land, they had little interest in modernization because their "idle lands produce[d]" reliable crops of corn and beans. Although synonymous with campesinos, corn was commonly grown by large landowners because it produced reliable yields with minimal investment.[26] Under Jorge Ubico, the state had encouraged large landowners to cultivate corn but they often simply rented their land to campesinos. Modernizers regarded this as both exploitative and a waste of land that could be dedicated to more lucrative crops including wheat, which the Agent believed would grow well in Jutiapa.

The agent for Jutiapa finally found a Swiss landowner who was willing to support experimentation with grapes that were well adapted to the dry conditions prevalent throughout Jutiapa. His reliance on a foreign landowner indicated the depth of local resistance to government intervention that might disrupt established labour and land use practices. Though he had praised the industry of farm workers, the agent still focused his conversion efforts on large landowners he tried to impress with new demonstration plots. These were "the only effective methods to excite the skeptical."[27] There is mixed evidence regarding his success, but his superiors in Guatemala City were enthusiastic about his efforts to proselytize large landowners. Just two months after the agent for Jutiapa complained about local disinterest in new crops, the Head of Extension services boasted that eagerness to plant grapes had driven up land prices in the region. In El Jícaro, Toruño suggested that Argentinian grape cultivars were growing so well that Guatemala could soon become a wine growing country. He wrote:

> I consider it indispensable to continue the fight [to introduce grapes] so that tomorrow Guatemala will be a flowering nation, a vision which all governments of democratic drive should have, for which reason…we should supervise this work and develop this crop in

[25] "Informe de Actividades Del Departamento de Extensíon y Fomento Agrícola: Primera Quincena," September, 1946. Min Ag 1887. AGCA. Guatemala.
[26] Corn was often used to colonize newly cleared land that was later planted with more lucrative exports. Corn needs just 64 days of labor per hectare whereas sugar needs 96, cotton, 90 and Coffee 160. It is unclear what management practices the Ministry of Agriculture used for these estimates. They were likely referring to corn alone. Milpa requires more work to maintain, but it is also more productive than a monocropped field. Manuel Roberto Yurrita Elgueta, "Agricultura," *Historia General de Guatremala: Epoca Contemporánea de 1945 a la Actualidad*, Tomo VI, (Guatemala: Asociación de Amigos del País, Fundación para la Cultura y el Desarrollo, 1997), 384.
[27] "Informe de Actividades Del Departamento de Extensíon y Fomento Agrícola: Primera Quincena," September, 1946. Min Ag 1887. AGCA. Guatemala.

> order to banish moonshine, that is not only an active venom, but also a stupefier of brains and scourge of Guatemala.[28]

Toruño dreamed that Guatemala could be materially and morally transformed through agricultural development. Alcohol was frequently used by contractors as a tool to encourage indigenous labourers to work on coastal plantations, often saddling campesinos with large debts they could not hope to repay. Large landowners, including the UFCo, also used alcohol as a tool for labour control.[29] For modernizers, the spread of new, more civilized crops like grapes and wheat symbolized the moral transformation of rural Guatemala and the end of the country's dependence on exploitative exports.

Experimental farms were transformative spaces where agents displayed the utility of new crops but they also inculcated labourers with modern agricultural techniques and labour habits. Racism defined many encounters between ladino agents and the indigenous campesinos they sought to reform. In Huehuetenango, the agricultural agent J. Guillermo Wellman used military labour to maintain grape cultivars planted on land donated by local farm owner, Jacinto Sosa. Wellman complained that his work on grape cultivation was "handicapped" by the need to give these peasant soldiers daily instructions in an effort to change their antiquated cultivation practices.[30] However, agents were often impressed by the enthusiasm of campesinos who were more interested in new tools, crops and techniques than established landowners. This eagerness broke down racial stereotypes and formed the basis for growing relationships between agents and often neglected small agriculturalists. Paul Burgess of the Instituto Indígena of Quiché wrote to Toruño in September 1947, praising the local agent Féliz Gándara for his dedication in teaching local campesinos new techniques for caring for livestock and crops. "We cannot stop contrasting the attitude of hostility and antagonism we felt under the past dictatorship," wrote Burgess, "toward our efforts in support of the indigenous race with this open and sincere cooperation."

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[28] "Informe de Actividades Del Departamento de Extensíon y Fomento Agrícola: Primera Quincena," September, 1946. Min Ag 1887. AGCA.

[29] Handy, *Revolution in the* Countryside, 10; Forster, *The Time of Freedom*, 123; Aviva Chomsky, "Laborers and Smallholders in Costa Rica's Mining Communities, 1900–1940," *Identity and Struggle at the Margins of the Nation-State: The Laboring Peoples of Central America and the Hispanic Caribbean* (Durham: Duke University Press, 1998), 169-195. For a discussion of alcohol consumption on 19th century coffee plantations see McCreery, *Rural Guatemala*, 293-294. For a more expansive analysis of alcohol use in Guatemala see collection David Carey Jr, ed. *Distilling the Influence of Alcohol: Aguardiente in Guatemalan History* (Gainesville: University Press of Florida, 2012).

[30] "Informe De Actividades del Departamento de Extensión y Fomento Agrícola: Segunda Quincena," October, 1946. Min. Ag. Leg. 1887. AGCA. Guatemala.

This new relationship was, Burgess wrote, markedly democratic and the strengthening of community relations with the state was a welcome step forward in the creation of a "new Guatemala."[31]

Unlike large landowners, farmers and campesinos eagerly organized themselves into Committees of Agriculture, Livestock and Rural Industry. These Committees were elected bodies made up of influential farmers and they acted as intermediaries who both represented local interests to agents and enforced regulations passed by the Ministry of Agriculture. In their basic form, Committees were re-imagined and democratized versions of the Committees for Agriculture and Roads that had been convened under the Ubico administration.[32] The ethnicity, wealth and political affiliations of Committee members varied across the country, reflecting established political and social hierarchies. For example, across the highlands Committees had higher levels of indigenous participation than in the traditionally ladino regions of the country which included El Progreso, Zacapa and Jutiapa.[33] Across the country, Committees quickly transcended their initial purpose and became popular vehicles for political organizing that enabled rural communities to communicate directly with the state. Their popularity anticipated the success of other community level organizations during the Revolution, including the Local Agrarian Committees that initiated the expropriations process during the Agrarian Reform.

In 1947, J.A. Toruño wrote the Minister of Agriculture to inform him that his agents had successfully organized Committees of Agriculture, Livestock and Rural Industry in over 200 municipalities. The Committees represented almost 20,000 campesinos and farmers and Toruño argued that their assistance was indispensable for agents. Committees offered detailed information about local issues and allowed agents to work with large groups instead of individual farmers, which would greatly slow down modernization.[34] Committees also offered the government a chance to influence local affairs. In legislation passed in May of 1947, the government required that the heads of these Committees be approved by the President, a convenient way to favor sympathetic rural leaders. However, in practice the Ministry of

[31] Paul Burgess to J.A. Toruño. September 1947. Min Ag. 1887. AGCA. Guatemala.
[32] Min Ag Memorias
[33] Note that ethnicity in Guatemala is often a combination of occupation and geographic location. It is not possible to ascertain self-ascribed ethnicity using surnames alone. This comment, therefore, is an inference based on Municipal politics and Committee letters. For more on the complexity of municipal politics during the revolution see Handy, *Revolution in the Countryside,* 62.
[34] Memorandum from J. Antonio Toruño to Minister of Agriculture, Franciso Valdes Calderón. May 31, 1947. Min. Ag. Leg. 1887. AGCA. Guatemala.

Agriculture encouraged fair elections and refused to appoint or create committees in rural areas. In 1948, the President of the Committee of Agriculture for San Pedro Sacatepéquez wrote to the Minister of Agriculture asking him for permission to create sub-committees for Agriculture in the municipality's villages for the "efficient development of our agriculture."[35] The Extension Department denied his request. They agreed it was important to stimulate the creation of sub-Committees in villages with the "best agricultural prospects" but they insisted that residents should organize their own committee via elections.[36] The Arévalo administration tried to ensure that these Committees were formed organically and reflected local priorities, but they could not prevent them from becoming political instruments. Schisms eventually emerged on Committees that mirrored national politics and divided moderates who supported the government's reformist ambitions and progressives who agitated for financial and land reforms.

The minutes of meetings preserved in the Ministry of Agriculture records indicate that Committees took their role as rural advocates of agrarian modernization very seriously. In 1947, the Committee of Agriculture for San Rafael Las Flores, in Santa Rosa, delegated oversight duties to its members. Juan García Mijangos, for example, was to advertise the existence of vaccines for cattle and chickens to livestock owners "to avoid the development of whatever illness in the Municipality, closely monitoring that residents comply by vaccinating all their livestock." Another member, Casimiro Pivaral was to work with Forest Rangers to monitor that landowners complied with their obligations to reforest land after cutting for lumber. Pivaral was urged to report non-compliance to the President of the Committee who would the contact municipal leaders. As duties were shared out, the role of the Committee in San Rafael Las Flores was made clear: watch the countryside, advocate modernization and act as an extension of the state in the most remote reaches of rural Guatemala. By creating these Committees, the Ministry of Agriculture was extending its influence past local levels of government and reinforcing the power of the state apparatus in areas that even agricultural agents rarely visited.[37]

[35] Felix Orozco V., President of Committee of Agriculture for San Pedro Sacatepequez to Minister of Agriculture. November 17, 1948. Min. Ag. Leg. 1886. AGCA. Guatemala.
[36] Carlos Gaytan, Secretary of Department of Extension and Agricultural Development, to Dirección General de Agriculture. November 30 1948. Min. Ag. Leg. 1886. AGCA. Guatemala. See also Article 5, "Reglamento de los Comités de Agricultura, Ganaderia e Industria Rurales."April, 24 1947. Min. Ag. 1886. AGCA.
[37] Minutes of Comité de Agricultura Meeting, San Rafael Las Flores, Santa Rosa. September 28 1947. Min. Ag. 1886. AGCA. Guatemala.

The Committees quickly transcended their initial function, and used their privileged access to the Minister of Agriculture and even the President to bypass Municipal and Departmental administration and advocate for issues of importance to farmers. In 1946, the recently founded Committee for Chimaltenango tried unsuccessfully to import corn seeds from El Paso, Texas. The President of the Committee, Ruben Flores, appealed to the Minister of Agriculture to help them acquire the licenses needed to import corn seed that would help farmers improve crops. He also asked for an analysis of local soils to help guide seed selection, chemicals and equipment to help eliminate an outbreak of *zompopos*, winged ants, destroying local crops.[38] Other Committees emphasized their urgent need for new agrarian technologies which could liberate them from penury. In a letter to the Minister of Agriculture, the Committee for Agriculture from Monjas, Jalapa urged the government to the send tractors to the municipality's "poor farmers" so that they could cultivate their land which "are very poor because they are filled with weeds." Within days, the Minister wrote to the Department of Mechanization telling them to investigate the practicality of sending tractors to Monjas.[39] Committees used the discourse of the state—with its emphasis on productivity and modernization—to frame their demands for basic tools and advanced technologies.

Committees wrote repeated and often insistent letters about the need for modern tractors but the state simply did not have the capacity to meet farmer demand. The Committee for Agriculture in Sanarate, El Progreso, for example, warned the Minister of Agriculture that the failure to mechanize threatened the future of tobacco cultivation in the region. A previous request for tractors made in late 1947 had not been answered, and so the Committee wrote again, insisting that local farmers still followed the "antiquated routine of the macana [digging stick] and hoe" but during winters when water was scarce this system did not allow farmers to improve yields. "And the Señor Minister, well understands," they wrote, "that we need [tractors] to turn up soils so that they keep the humidity necessary and thereby, the crops can have life and develop well too."[40] They added that tractors would help them—specifically medium to small

[38] Flores ended his letter with a plea for 500 hoes to be provided at cost, warning that workers were being exploited by unscrupulous vendors. Ruben Flores A., President of Committee of Agriculture, Livestock and Rural Industry for Chimaltenango to Minister of Agriculture. May 6, 1946. Min. Ag. Leg.1886. AGCA. Guatemala.
[39] Committee of Agriculture, Livestock and Rural Industry for Monjas, Jalapa to Minister of Agriculture. February 25, 1948. Min Ag 1886. AGCA. Guatemala.
[40] Deep plowing actually promotes humidity loss and erosion. Modern conservation agriculture attempts to reintroduce soil moisture by providing semi-permanent soil cover and using zero-tillage or shallow tillage techniques. In the arid Oriente the "antiquated" digging stick was a better technology for producing food and

farmers who had enough land to till mechanically—to minimize the cost and frustration of finding day labourers to work on tobacco farms. In an effort to guarantee their request, they contacted Keilhauer, Pagram and Co. Ltd. who confirmed that they had tractors for sale. The Committee urged the Minister to buy at least one, which residents of Sanarate could rent, considering that: "the majority of the residents here, dedicated to agricultural work, are very poor and for this reason it is not possible to acquire the implements we need."[41] Once again the request was handed off to the Department of Mechanization, who told the Minister that there were no tractors due to an equipment shortage.

The Ministry of Agriculture implemented an informal triage system that prioritized assistance for the Pacific Coast and the region around Quetzaltenango. While touring Chimaltenango in 1948, the new Head of Extension Miguel Reyes was consistently told about the need for more tractors and basic farms tools. In Patzún, Tecpán, and Comalapa, farmers asked for tractors and chemical fertilizers so that they could undertake "more technical and modern" cultivation of wheat and corn. Farmers in Acatenango thanked the Ministry for their work propagating new techniques for improving yields, but they insisted on the need for basic tools and access to tractors to quicken the pace of development in the area. In response, Reyes told the Committee that all available tractors were dedicated to work on the South Coast and in Quetzaltenango.[42] Many Committees wrote detailed justifications encouraging the state to purchase tractors for their municipalities and agents continued to promote the value of mechanization. Informally though, the state focused its limited resources on the most established agricultural zones including the South Coast and Quetzaltenango.

Even if mechanization had been widely available, it would have disproportionately benefited farmers who had sufficient and suitable land for tractors to till. Nearly every Agent reported campesino demands for basic tools, a request which indicated that rural poverty was deeply rooted. The Agent for Alta Verapaz concluded his September report by noting the "unspeakable insistence" with which the "working poor" of Quiché, Baja Verapaz, and the Petén

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reducing soil erosion. Food and Agriculture Organization, "Conservation Agriculture: Case Studies in Latin America and Africa," (Rome: FAO, 2001). Accessed June 20, 2017. http://www.fao.org/docrep/003/y1730e/y1730e03.htm#P1_0

[41] Committee of Agriculture for Sanarte to Minister of Agriculture. January 24, 1948. Min. Ag. 1886. AGCA. Guatemala.

[42] Miguel Reyes to Minister of Agriculture. March 19, 1948. Min. Ag. 1887. AGCA. Guatemala. After the coup, Reyes served as the technical assistant for the new cotton organization, AGUAPA.

asked the agent for machetes and hoes in anticipation of the next planting season.[43] The Agent in charge of Jutiapa wrote to Toruño in October to inform him that farm tools—hoes, plows, machetes—were urgently needed by poor campesinos who wanted to intensify production.[44] In the neighboring department of Zacapa, the Agent asked Toruño for a shipment of hoes to be sent because he was continually receiving requests for tools from the most remote parts of the Department.[45]

Some agents adapted their modernization efforts to cope with the lack of tools. The Agent for Huehuetenango, one of the more inaccessible regions of Guatemala, shared in the enthusiasm for mechanization. He boasted that his experimental plantation was ripe for tractor tilling, with 90% of its area considered flat. However, he focused on demonstrating and disseminating appropriate technology that campesinos could easily use. He asked the government to send him a simple moldboard plow. Since oxen were plentiful in the region, he anticipated tilling could be done cheaply and the plow could be lent to farmers wanting to improve their yields. The Agent's actions indicate that in remote areas it made more sense to buy basic farm tools than invest in tractors that required a costly infrastructure to maintain.[46] This sensible approach to local agricultural problems was dismissed by the Head of Extension, who remained enamored of the mechanization as quick solution to underproduction.

In a memo sent to the Ministry of Agriculture on February 12, 1947, J.A. Toruño laid out the three most pressing problems in Guatemalan agriculture: scarcity of labour on the coast, shortage of land in the highlands, and a general shortage of basic farm implements and tractors. Cumulatively, these problems resulted in endemic underproduction that raised the prices of food. This caused "discontent and anguish among the labouring classes of the countryside and these conditions [are] echoed in the urban population mainly among the poor and working classes."[47] Toruño used the threat of instability in the city and countryside to justify an immediate investment in tractors, which would be used to sow and harvest wheat in the Western highlands. Since the government lacked the disposable capital to quickly expand its fleet of tractors, Toruño

[43] The head of extension included extended excerpts from agents in his letters to the Minister of Agriculture. For example, this was drawn from the Alta Verapaz's agents report. J.A Toruño to the Minister of Agriculture, September 30, 1946. Min Ag 1887. AGCA. Guatemala.
[44] J.A Toruño to the Minister of Agriculture. October 23, 1946. Min. Ag. 1887. AGCA. Guatemala.
[45] J.A Toruño to the Minister of Agriculture. October 25, 1946. Min. Ag. 1887. AGCA. Guatemala.
[46] J.A Toruño to the Minister of Agriculture. October 17, 1946. Min. Ag. 1887. AGCA. Guatemala.
[47] Memorandum: Head of Extension and Rural Development to Minister of State, Office of Agriculture. February 12, 1947. AGCA. Guatemala.

advised them to lease-to-own ten tractors from the firm Keilhauer, Pagram and Co, which would take care of maintenance.

This approach might have temporarily prevented grain shortages, but it only masked the systemic issues that caused food shortages including land scarcity. Even Toruño acknowledged that in some departments nearly 75% of the population had no reliable access to land. They had to either rent land from large landowners—paying for the right to subsist—or forego agriculture and work on plantations where they were often paid poorly and exploited. Though Toruño was clearly aware of the systemic challenges that hindered Guatemalan agriculture, he remained firmly focused on modernization through technical improvements. After detailing the fine points of a mechanization program, he curtly dismissed the thorny land tenure problem as an issue that required further study by the Department of Rural Economy and the Ministry of Agriculture.[48]

As Head of Extension, Toruño was a vocal proponent of community engagement but he did not believe that systematic changes to land tenure were necessary for Guatemala to solve underproduction. He recommended that the government should encourage the growth of the Committees for Agriculture by creating a Federation under the auspices of the Ministry of Agriculture. The Federation would take charge of grain storage for its members, allowing them to sell when prices were high and collectively engage in limited exports, although not at the expense of local industry. They could also borrow against the value of their stored grain, allowing farmers to access capital so that they could prepare for the next harvest. From a technical perspective, the Federation would dispense tools, fertilizers, seeds, insecticides and machinery to its members at close to cost. Finally, and importantly, the Federation would attend to the improvement of rural housing "and everything related to the improvement of the conditions of life of the small farmer and campesino in the Republic."[49] The proposed responsibilities of the Federation almost exactly mirrored the future mandate of INFOP including the focus on rural housing, credits, and farm equipment. This model for rural development encouraged campesinos and small market farmers to engage with the state, but it was unclear if the proposed Federation would have the political clout to lobby for systematic changes to economic and labour policy that were needed for equitable rural development.

[48] Ibid.
[49] Memorandum from J. Antonio Toruño to Minister of Agriculture, Franciso Valdes Calderón. May 31, 1947. Min. Ag. Leg. 1887. AGCA. Guatemala.

The democratic character of the Federation could not compensate for the possibility that it would turn into sphere of political contest and patronage instead of a space to make agrarian change. In 1947, Toruño sent the incoming Minister of Agriculture, Francisco Valdes Calderón a request to expand the power and authority of the Extension Department so that it had more independence within the Ministry. He alleged that in 1946 partisan supporters of the PAR pressured the Congressional Commission of Agriculture to appoint its members to positions in the Directorate-General for Agriculture. Toruño tendered his resignation to the embattled Minister of Agriculture, who refused it and rejected the candidates imposed by the Commission of Agriculture.[50] After the conflict, Toruño alleged that PAR-sympathizers in the Directorate-General for Agriculture punished the Extension Department with budget cuts and staffing reductions. The Extension Department continued organizing Committees, distributing fertilizer and offering technical assistance but Toruño pushed unsuccessfully for more independence. He asked the new Minister Francisco Valdes Calderón for financial and administrative freedom to collaborate with other agencies including the Department of Forestry and the Department of Mechanization, which he argued was key to the success of rural economic development.

Toruño retired in frustration in 1947. He had lost his battle to keep the Extension Department narrowly focused on technical interventions as more progressive agents—many affiliated with the pro-peasant PAR—pushed the Department to embrace a more ambitious agenda that enabled structural change. When agents gathered in Guatemala City to fete their boss, he used the opportunity to remind them of the "primordial" importance of extension agents. As the advance guard for the Ministry of Agriculture, agents bridged the "gap between the peasantry and the state" and hastened agricultural modernization.[51] After his retirement, agents were told to send reports describing the party to Ministry officials. Toruño used the opportunity to advocate for agricultural credit as an essential part of rural development. His new emphasis on credit indicated that the outgoing Head of Extension had finally begun to admit the limitations of technical assistance as the primary means of rural development.[52] As campesinos and small farmers assumed a more active role in rural modernization, the Extension Department had to

[50] Among the partisan PAR supporters he named were Rafael Samayoa and Roberto Asturias. "Memorandum from J. A. Toruño to Francisco Valdes Calderón." June 28, 1947. Min. Ag. 1887. AGCA. Guatemala.
[51] José B. Jerez, General Agent of Agriculture, Retalhuleu, to Head of Extension and Agricultural Development. December 12, 1947. Min. Ag. Leg. 1887. AGCA. Guatemala.
[52] General Agent of Agriculture for Chiquimula to Head of Extension and Agricultural Development. December 12, 1947. Min. Ag. 1887. AGCA. Guatemala.

reconsider its emphasis on technical assistance. Feedback from Committees for Agriculture and Agent helped shaped a more expansive definition of rural development that embraced financial and land reforms as tools that would create greater equality and productivity.

Losing Faith

Agents encountered two major problems during their fieldwork that required substantive and systematic reforms to correct: capital shortages and land scarcity. Though many campesinos found elements of modern agriculture attractive, most lacked sufficient land and the financial capacity to recreate the idealized experimental farms managed by extension agents. As they encountered rank inequality in the countryside, agents began to question the efficacy of modernization efforts that focused tightly on improving production but made little effort to address the structural causes of underproduction. Agents offered campesinos advice about crop rotations, seed selection and fertilizers, but without land and adequate capital the productivity promise of modernization could not be realized. At best, these technical fixes temporarily staved off rural demands for land by increasing the productivity of the small plots of land that campesinos tended. Too often the technical fixes were misguided and led to little or no improvement in production. Over the long term, this intensification on marginal land would lead to significant environmental and financial problems that worsened inequality. Agents and Committees for Agriculture sent the Ministry of Agriculture detailed letters reporting on rural conflicts that divided campesinos and large landowners—often along racial lines—and prevented the former from fully engaging in modernization. These letters made it clear that campesinos who supported the state were being actively persecuted by landowners. If the government took no action, they risked losing the faith of campesinos who supported the Arevalo administration's progressive agenda.

In December 1946, the Committee for Agriculture for Asunción Mita, Jutiapa, appealed to the Minister of Agriculture to intervene in a local land conflict. The Committee wanted landowners to rent land to campesinos at a reasonable cost and eliminate the practice of payment in advance of the harvest. They argued that access to good land would boost productivity and help campesinos deal with inflation: "life tends to get more expensive everyday mainly in these

areas where there are no other means of subsistence.[53] They wanted the Minister to intervene to ensure that landowners offered them quality land, alleging that even when campesinos obtained land it was often marginal and could not support decent yields.[54] Initially, the Section of Colonization and Lands warned the Ministry of Agriculture not to intercede because this was a dispute over private rental agreements. The government had little formal authority and at best could apply heavy pressure to force landowners to engage with campesinos. They also worried that Ministerial intervention would sanction this bypassing of administrative hierarchies, and that instead the Committee should look for a local powerbroker to deal with the issue privately.[55] The Alcalde Don Maximiliano Ramírez attempted to broker a meeting to discuss land problems between campesinos and local landowners, but the latter refused to attend.[56]

In late January 1947, the Agent for Jutiapa, Isaías Benedicto Hernández, was sent to investigate the growing land conflict in the municipality of Asunción Mita. He found that over 600 campesinos had no access to land because local landowners refused to rent to them.[57] The Alcalde refused to convene another meeting of landowners and campesinos because landowners told him privately that they had already picked campesinos to rent their land.[58] Over 50 landless peasants waiting for land met with the Committee for Agriculture and Benedicto.

> [They] declared bitterly, that for two years, since they voted for Doctor Juan José Arévalo, they are victims of the unjustified hatred of the landowners who before gave them somewhere to plant; that when they checked the stated elections all the property owners as [if] in agreement, asked their renters: who did you vote for? Upon telling them for Doctor Arévalo, they responded: "NO LONGER WILL I GIVE YOU WHERE TO SOW," but to some who needed [land] they gave it, to the most notorious Arevalistas, they did not give any [land].[59]

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[53] Memorandum from Committee of Agriculture for Asunción Mita, Jutiapa to Minister of Agriculture. December 1946. Min. Ag. Leg. 1886. AGCA. Guatemala; Minutes of Committee of Agriculture from Asunción Mita. December 12, 1946. Min. Ag. Leg. 1886. AGCA. Guatemala.
[54] This land was characterized by poor soils and was often far from reliable water supplies. Isaías Benedicto Hernández, General Agent of Agriculture for Jutiapa to Minister of Agriculture. February 8, 1947. Min. Ag. 1886. AGCA. Guatemala.
[55] Sección General de Colonización y Tierras to Sección de Proyectos. December 27, 1946. Min Ag. 1886. AGCA. Guatemala.
[56] Minutes of Committee of Agriculture from Asunción Mita. December 12, 1946. Min. Ag. Leg. 1886. AGCA. Guatemala.
[57] Isaías Benedicto Hernández, Agent for Jutiapa, to Sub-Secretary of Agriculture. January 27, 1947. Min. Ag. Leg. 1886. AGCA. Guatemala.
[58] Isaías Benedicto Hernández, Agent for Jutiapa, to Minister of Agriculture. February 8, 1947 Min. Ag. Leg. 1886. AGCA. Guatemala.
[59] Isaías Benedicto Hernández, Agent for Jutiapa, to Sub-Secretary of Agriculture, January 27, 1947. AGCA. Guatemala.

After hearing their stories, Benedicto concluded campesinos and landowners hated each other dearly, in part because of the "little tact with which capitalist have treated the poor" which generated considerable resentment among the peasantry.[60]

The peasants' testimony demonstrated the considerable power large landowners exercised over rural politics and land tenure. By selectively denying campesinos land, they could discourage political organizing and maintain a profitable *status quo* that was detrimental to productivity. Benedicto argued that resettlement on private farms was the only way to avoid further antagonism that could lead to "fatal consequences."[61] This suggestion was rejected by the national mortgage provider, Crédito Hipotecario Nacional (CHN). They cited the high cost of buying parcels and suggested that campesinos should be resettled on existing government land. The General Section of Colonization and Lands agreed and identified nearly 200 caballerias of land in the Colonia Montúfar that was available for campesino relocation.[62] Resettlement avoided direct confrontation with large landowners, but it was untenable as a long term solution because the government did not control sufficient land to resettle all aggrieved campesinos. While the government struggled to find land for campesinos, food production suffered and rural inequality deepened.

In 1948, the Committee of Agriculture from Santa Cruz Naranjo, Santa Rosa asked the government to help resolve a local corn shortage that caused artificially high grain prices in the region.[63] The Municipality of Santa Cruz Naranjo lay Southeast of Guatemala City, between the Departments of Escuintla and Jutiapa. To avoid future shortages, the Committee asked the state to resettle them on parcels on the National Farm Cerro Redondo where better land would allow them to produce more and avoid "the calamities that we are now suffering with the shortages of corn."[64] The administrator for Cerro Redondo declined the Committee's request for resettlement, citing a lack of space. The administrator noted that there were already a considerable number of renters from the Santa Cruz Naranjo who picked coffee in return for access to land. To accept more would undermine their efforts to ensure that resident campesinos, or colonos, "live[d]

[60] Isaías Benedicto Hernández, Agent for Jutiapa, to Minister of Agriculture. February 8, 1947 Min. Ag. Leg. 1886. AGCA. Guatemala.
[61] Ibid.
[62] Enclosed in Miguel Ángel Reyes to Minister of Agriculture, March 19, 1948. Min. Ag. 1887. AGCA. Guatemala.
[63] Committee for Agriculture for Santa Cruz Naranjo, Santa Rosa, to Minister of Agriculture. February 2, 1948. Min. Ag. Leg. 1886. Min Ag. AGCA. Guatemala.
[64] Committee from Santa Cruz Naranjo to Agent of Agriculture for Santa Rosa. 8 Feb 1948. Min. Ag. Leg. 1886. AGCA. Guatemala.

contently and in the best way possible." [65] Though their efforts to secure new land failed, their Agent tried with limited success to lobby local farmers to increase the amount of corn they were cultivating so that future shortages could be averted. "It is not reasonable," he wrote, "that Guatemala, being a country of farmers, has to import CORN from other countries."[66] Rural inequality and poverty prevented small farmers and campesinos from accessing productive land. This also slowed efforts to diversify crops and introduce new production techniques and technologies.

The government passed two pieces of legislation during the 1940s that were intended to ameliorate the demand for land: the Agricultural Emergency Law (1946) and the Laws of Forced Rental, passed in 1949 and updated in 1951. These laws enabled campesinos to rent unused land from large landowners in exchange for a percentage of their harvest. While municipal authorities were not always compliant with the law, evidence suggests that some highland peasants were quick to use the law to re-establish access to corn land on the coast. These pieces of legislation were not of immediate consequence to most Guatemalans, since they benefitted a small number of campesinos and did little to change corn prices. Jim Handy notes that these laws were "harbingers of more drastic agrarian legislation" that was passed in 1952.[67] In the interim, attempts to redistribute land and relocate campesinos to more productive areas faced harsh opposition from local landowners.

As the largest landowner in the country, the government attempted to relocate campesinos to its own National Farms. Under President Arévalo the state ran nearly 130 large farms across the country. Most of these farms had been seized from German owners during World War II, but additional properties were taken from Ubico and his supporters after they were forced out of office. Collectively, these farms produced roughly 25% of Guatemala's coffee and they employed nearly 200,000 Guatemalans. Though they were the most significant agricultural enterprise in Central America, they were plagued by corruption and incompetent administration. The Director of the National Farms was the President's brother, Mariano Arévalo, and foreign observers reported that administrators knew little about farm operations. There was also frequent

[65] R. Ferraté, Inspector, to Departmento de Fincas Rusticas Nacionales, February 24, 1948. Min Ag. Leg. 1886. AGCA. Guatemala.
[66] Infrascrito Agente General de Agricultural del Departmento de Santa Rosa. n/d. Min Ag. Leg. 1886. AGCA. Guatemala.
[67] Handy, *Revolution in the Countryside*, 26, 81.

confrontations between fieldworkers and the administrators over wages and labour conditions that undermined productivity.[68]At the end of the Arévalo period, production had declined significantly and the once modern coffee farms were in total disarray.[69]

This ad hoc resettlement effort was a temporary solution which defused rural tension at government expense, but there was never enough land to satisfy demand. Arévalo also heavily promoted a colonization initiative that tried to establish new agricultural colonies in the remote Petén. Arbenz dispatched more than 400 workers, engineers, doctors and military officials to the lightly populated region and they established a new colony, Poptún. These "soldiers of the reconquest" were supposed to engineer a new, modern city from the raw jungle.[70] Poptún was also a social laboratory, where planners tried to create a perfect, productive balance of indigenous and ladino settlers that would serve as the nucleus for a new Guatemala. They hoped that the "inferior" indigenous colonists would impart their "industry, selflessness, constancy" and morality to "superior" ladino settlers who showed more "mental agility [and] more progressive spirit."[71] Though Arévalo had grand aspirations for Poptún, the colony was an expensive disaster that attracted few settlers and proved expensive to supply and maintain.[72] A journalist for the Cedar Rapids Gazette who visited the colony in 1946 reported that it took 30 days for mules laden with supplies to make the trip from Guatemala City. The colony depended almost entirely on air transportation for its supplies, which artificially increased expenses and increased the sense of isolation.[73] Though the population grew slowly, many migrants

[68] Farm administrators were represented by the FPL while fieldworkers were affiliated with the PAR. These political overtones exacerbated labor tensions on plantations like El Porvenir and La Reforma. Administrators viewed their efforts to control labor as a defense of the status quo and the peasantry pushed the state to fulfill the promise of the Revolution. Handy, *Revolution in the Countryside*, 69. Cindy Forster, *The Time of Freedom*, 158.
[69] Leo Suslow, *Aspects of Social Reforms in Guatemala, 1944-1949: Problems of Planned Social Change in an Underdeveloped Country* (New York: Colgate University, 1949). Handy, *Revolution in the* Countryside, 69. Gleijesis, *Shattered Hope*, 43-44.
[70] Liza Grandia, *Enclosed*: *Conservation, Cattle, and Commerce Among the Q'eqchi' Maya Lowlanders* (Seattle: University of Washington Press, 2012), 46-47.
[71] "Memorandum, Colonia Pilota, August 18, 1946," in "Primera Colonia Agricola Nacional: Poptún," September 29, 1946, Guatemala, Min. Ag. 1263. AGCA. Guatemala.
[72] The Gazette reported that there were 700 workers, 500 were building new roads and 200 were tending 340 acres with a mix of corn, beans rice and pastures. The origin of these settlers was unclear. Indeed, the author of a report that tried to identify potential regions for recruitment acknowledged repeatedly that they knew little about Guatemala's regions outside of the Pacific Coast and some areas of Baja Verapaz. Their knowledge of these regions was directly tied to modernization initiatives, including irrigation schemes for the Motagua Valley. "Procedencia de los Primeros Pobladores," in "Primera Colonia Agricola Nacional: Poptún," September 29, 1946, Guatemala, Min. Ag. 1263. AGCA. Guatemala.
[73] Rex Conn, *The Cedar Rapids Gazette*. October 27, 1946. Min. Ag. Leg. 1263. AGCA. Guatemala.

unaccustomed to the humid lowlands languished in the heat and their bodies were burdened by malaria, parasites and venereal diseases.[74]

Resettlement and colonization efforts did not successfully increase access to land for most Guatemalans, but even if they had worked these initiatives did not address the financial problems that prevented campesinos from adopting new crops. In August 1947, the Agricultural Agent for Jutiapa wrote an extended critique of agricultural extension that extolled the benefits of new crops like cotton but did not guarantee small growers fair access to markets. Isaías Benedicto Hernández warned his superiors that unless the Extension Department quickly intervened they would lose the "faith and enthusiasm of the peasantry" for whom extension had not resulted in the promised "economic bonanza." Without government protection, campesinos were easy prey for "hoarders without scruples." Hernández reminded his superior that past efforts to stimulate cotton production failed because farmers were offered absurdly low prices by a small clique of buyers who controlled the market. He encouraged the state to actively regulate large industry and proposed that General Agents of Agriculture should also help farmers market and sell their products. Finally, agents would help farmers organize so that they could avoid exploitation. This proposal implied a politicization of the Committee model that had proven to be an effective vehicle for campesinos and farmers to organize. His first initiative was to encourage cotton farmers in Jutiapa to sell collectively, which directly challenged the market monopoly of large landowners and industrialists who controlled cotton mills.[75]

The letter sparked fierce debate in Guatemala City about the role of Agricultural Agents and the scope of rural development efforts. The Ministry of Economy and Labour rejected the Hernández proposal entirely and counselled a more moderate approach that did not alienate elites. Their response occurred during an unfolding political crisis during which the Arévalo administration—pushed by more conservative members of their governing coalition—moved to restrict the actions of PAR members who were actively organizing rural labour. The Arévalo government opposed measures that might encourage rural activism, because they worried that

[74] The interest doctors expressed in sexually transmitted diseases indicates their preoccupation about population health and their hopes that colony would serve as an example of successful assimilation. Carlos E. Urrutia C. to Gobernador General de la PCAN (Primera Colonia Agrícola de Potún), Manuel Basterrechea. January 23rd, 1947. Min. Ag. 1263. AGCA. Guatemala. For discussion of creating ideal citizens see Nancy Leys Stepan, "'*The Hour of Eugenics'": Race, Gender, and Nation in Latin America* (Ithaca: Cornell University Press, 2015).
[75] Isaías Benedicto Hernández, Agent for Jutiapa, to J Antonio Toruño. August 1, 1947. Min. Ag. 1887. AGCA. Guatemala.

this might antagonize conservatives and bring the Revolution to a premature conclusion.[76] In this moment of political ferment, the Ministry of Economy and Labour favored the status quo and argued that Guatemala should adopt a more managed approach to the economy that encouraged domestic production and supported existing industries. To reinforce their point, Ministry officials noted that El Salvador had recently constructed a huge textile mill that would consume the better part of their cotton production. This would leave little for Guatemala to import and domestic textile producers faced a double threat of shortages of primary materials and a flood of textiles from El Salvador.[77]

To ensure that farmers received a just price for the cotton they produced, they suggested revising the tariffs structure along protectionist lines to make national cotton and textiles more competitive with imports. A follow up to this letter in November, 1947, advised the Minister of Economy and Labour to focus on guaranteed minimum prices for farmers and to ignore export markets. Farmers' crops would be bought at 80% of their market value at the start of the season and additional profits generated by the sale of crops at the end of the season would be redistributed. Since cotton could be stored for up to a year without fear of losses, the risk to the government was minimal. Ministry of Economy and Labour officials argued that this was a more balanced approach that encouraged small producers to take risks on new crops without unduly provoking industrialists.[78]

The Director General of Agriculture, Hector Sierra, issued recommendations in response to the Hernández letter to the Minister of Agriculture in December of 1947. Sierra focused on the sesame industry, another example documented by Hernández alongside cotton. Cordon Horjales and Kon Hermanos owned most of the mills capable of turning sesame into oil. They used their leverage over farmers to buy sesame at rock-bottom prices. Sierra confirmed that factories processing sesame seed offered 6Q or 7Q per quintal, while farmers from Santa Rosa and Jutiapa maintained that fair compensation was between 9Q and 10Q per quintal. Sierra argued that factory owners were taking advantage of small producers, leveraging their access to alternative oil products like corozo palm to force desperate campesinos to sell at a loss. Sierra charged that

[76] Handy, *Revolution in the Countryside*, 67; Jim Handy, "'A Sea of Indians': Ethnic Conflict and the Guatemalan Revolution, 1944-1952," *The Americas* 46, no. 2 (1989): 199-201.
[77] Marco A. Ramírez, Assessor, to Minister of Economy and Labor. September 26, 1947. Min. Ag. 1887. AGCA. Guatemala.
[78] Marco A. Ramírez, Assessor, to Minister of Economy and Labor, November 27, 1947. Min. Ag. Leg. 1887. AGCA. Guatemala.

Horjales and Hermanos were "making war on the cultivation of sesame" by offering small farmers and campesinos unjustly low prices. He confirmed that refined sesame oil was being sold to Venezuela at a significant premium of 17Q per quintal. To ensure that small farmers continued to plant sesame, Sierra advised the government to fix the price of sesame. If industrialists refused to buy, the government could export seeds without fear of losses. He encouraged the government to convene a meeting of farmers, industrialists and the Government where price issues could be addressed.[79] In the opening months of 1948, the government passed legislation addressing cotton and sesame prices.

Campesinos who wanted to engage in commodity production had to overcome considerable barriers. They first had to secure land with good soils and accessible water. Then they had to compete as small producers in volatile markets that were dominated by large landowners who often controlled the means of refining grains and seeds into flour and oil derivatives that fetched higher prices on the market. The Ministry of Agriculture encouraged farmers to modernize, but even campesinos who had access to land lacked the financial capacity to buy the new tools, hybrid seeds and fertilizers needed to compete with industrial farms. Price controls opened a small space for campesinos to re-orient their farms toward market production, but they did not enable capital-starved small producers to compete effectively. Without this incentive, there was little indication that campesinos would commit wholly to the market and abandon intercropping and subsistence activities. The government tried to facilitate rural access to capital by opening state-funded credit agencies in rural communities. This initiative excited unexpected hostility from landowners and conservative politicians who viewed the move as an attack on established financial and social hierarchies.

Tensions between local landowners and more progressive modernizers and local landowners were exacerbated by the fractious party politics which hindered legislative work throughout the Arevalo period (1945-51). After Ubico left office, young professionals and students organized into two political parties, the National Renovation (RN) and the Popular Liberation Front (FPL). Shortly after Arévalo's election, the two most important parties of the revolution united to form the Revolutionary Action Party (PAR). This union was short lived and the RN split from the PAR in 1946, although they pledged to support the cause of the revolution.

[79] Hector M. Sierra, Director General of Agriculture, to Minister of Agriculture. December 18, 1947. Min. Ag. 1887. AGCA. Guatemala.

The PAR split again later that year, when most of the members left the party to form the FPL because they were concerned the party was drifting too far to the left. FPL and RN members were concerned that progressive elements in the PAR—influenced by organized labour and communists—were pushing for radical changes to Guatemala's agricultural landscape that might lead to rural violence. Despite these setbacks, the PAR continued to grow in strength and its members were among the most committed, active and effective in government. Nevertheless, these new parties were hardly stable, and internecine conflict dogged the RN, FPL and PAR into the 1950 Presidential elections. Though Arévalo skillfully balanced the competing interests of rival parties, these protracted political conflicts limited his ability to pass new legislation.[80]

National political conflicts also divided politicians and government agents throughout the countryside. In 1948, the pro-peasant PAR took a third of the municipal seats in the country, which made it the second largest political party behind the FPL. Their rising political influence, especially among workers and campesinos, exacerbated agitation between conservative and radical elements of the revolution. Early in 1948, the Governor and the municipal leaders from Chimaltenango urged the Ministry to immediately dismiss the Department's General Agent for Agriculture, Eduardo Guerrero. The Municipal Alcalde for Tecpán argued that Guerrrero was a political leader, not a qualified technician and a complaint from Yepocapa cautioned that Guerrero's activism would drive a wedge between the Extension Department and rural farmers.[81] The allegations led to an investigation by the new Head of Extension, Miguel Ángel Reyes which concluded that Guerrero failed to visit all the municipalities under his charge.[82]

Guerrero defended his record, noting that he was only appointed in October and he was unable to work in January because the Governor seized his office. He claimed the Governor of Chimaltenango, Colonel Rubén Matta, was trying to force himself and two other active members of the PAR to leave the Department. Matta and his co-conspirator the Alcalde of Patzicía, were allegedly following directions from the FPL leadership to strengthen the party's position in

[80] Handy, *Revolution in the Countryside*, 23, 31-32.
[81] Minister of Agriculture, Francisco Valdes Calderón, to Head of Extension and Edmund Guerrero Castellanos. February 4 February 1948. Min. Ag. Leg. 1887. AGCA. Guatemala.
[82] Officials from Patzún told Reyes that Guerrero had only collected information on crops and farms. They asked for a new agent to replace Guerrero, whom they mocked: "what he knows least about is agriculture." In Acatanengo, Committee members also emphasized the need for new techniques and tools to help overcome rudimentary cultivation prevalent in the region. They claimed that Guerrero took their money for an order of 'azadones', a large hoe used by campesinos, but never fulfilled the order. Head of Extension to Minister of Agriculture. March 19, 1948. Min. Ag. 1887. AGCA. Guatemala.

Chimaltenango. Guerrero's story was corroborated by a judge, who confirmed that the Agent was twice accused and then briefly imprisoned on charges ranging from resistance, disobedience and fraud. Guerrero was eventually exonerated and he retained his position, although his opponents continued to oppose his presence and undertook increasingly desperate attacks on his character.[83]

The intense opposition to Guerrero's presence in Chimaltenango was driven by his progressive position on rural development. He was a vocal proponent of financial and land reforms that challenged large landowners and their allies. On a trip through the municipality of Tecpán, Guerrero observed that the main problem facing small wheat growers was financial, not technical. He estimated that nearly 90% of wheat farmers didn't have enough money to plant or maintain their crops. The local mill, 'Helvetia', lent farmers money when they were short on food and funds, and the loans were paid back in wheat. The mill processed this artificially cheap wheat into flour that it sold at a huge mark-up. [84] To avoid crippling major debts, farmers hoped for a good harvest so that they could pay off their loans. However, intemperate weather could easily strand small producers in perpetual poverty and many farmers were still paying off debts from 1946, when wheat crops failed across the country.

Guerrero told several Committees that poverty was the biggest obstacle to agricultural development in the region. His efforts to transform local financial affairs subverted the pillars of local power and authority made him a target of the established elites in Chimaltenango. He encouraged farmers across Chimaltenango to borrow from newly established Offices for Rural Credit, which offered loans up to Q300 at 4% annual interest and made no claims on farmer crops.[85] This government sponsored solution allowed campesinos to avoid borrowing from the "rich hoarders" who offered exploitative loans.[86] However, administrative delays and financial constraints limited the reach of these affordable loans. Without substantive land reforms and

[83] They accused him of abandoning his responsibilities on an 'artistic tour' to the newly founded agrarian colony of Poptún, in the Petén, which they construed as evidence of his dishonest and general negligence. Letter from Departmental Governor to Secretario General de la Presidencia de la Republica, 25 September, 1948, Ministry of Agriculture, Legajo 1887

[84] Helvetia forced farmers to pay back a fanega of wheat for every quetzal borrowed: borrowing 100 Quetzales would also require a farmer to return 150 quintales of wheat. Harvested wheat bought at Q8.30 per fanega was sold as flour at Q12 per quintal. A fanega of grain is equivalent to about 1.6 bushels. McCreery, *Rural Guatemala*, Table 1.2, 32.

[85] Head of Extension to Minister of Agriculture. March 2, 1948. Min. Ag. Leg. 1887. AGCA. Guatemala.

[86] Head of Extension to Minister of Agriculture, March 1, 1948. Min. Ag. Leg 1887. AGCA. Guatemala.

sweeping financial changes, many farmers still had to depend on the largesse of local landowners for life saving loans.

Rural credit was seen as a vital need by campesinos throughout Guatemala. A meeting of Alcaldes, Committees for Agriculture, and farmers in Quetzaltenango urged the Ministry of Agriculture to rapidly open new Offices for Rural Credit throughout Guatemala. The Minister, Valdes Calderón, responded positively to these recommendations and he encouraged the Bank of Guatemala to open new offices across Western Guatemala because the development of small farmers and businesses was being hindered by the lack of capital. The Minister wrote that campesinos currently had to submit themselves to the "extortion of a few wealthy people, without scruples, who levy growing interest and [place] drastic exigencies [on loans]." He argued that new credit offices would favor the development of a cadre of honest, hardworking farmers who represented the future of the country.[87] His lobbying indicated the importance of agricultural agents and Committees as sources of information about the countryside and their influence over the Ministry's policies. The Bank, however, was non-committal. The President of the Bank, Manuel Noriega Morales, acknowledged there was a credit shortage in rural Guatemala but he redirected the Minister's requests to the national mortgage provider CHN (Crédito Hipotecario Nacional) because the bank had no legal authority to establish credit agencies according to the "Regulations for Rural Credit Agencies" passed in January 1946.[88] The head of the Bank of Guatemala acknowledged the shortcomings in the current strategy for rural development and advised the Minister of Agriculture to consult new reports on the creation of a Banco Agrícola and the Instituto de Fomento de la Producción (INFOP), emphasizing their potential for realizing the Government's agenda for rural change.[89]

For its part, the CHN was anxious to assuage concerns that they were too slow to open new offices for rural credit. In 1947, they penned an extensive report on their rural credit program to the Ministry of Agriculture, which contacted the CHN after fielding several requests for a Credit Agency from the Committee for Agriculture in Santa Rosa de Lima in Santa Rosa.[90]

[87] Minister of Agriculture, Francisco Valdes Calderón, to Director of Bank of Guatemala, Manuel Noriega Morales. April 12, 1947. Min. Ag. 1886. AGCA. Guatemala.
[88] Manuel Noriega Morales, President of Bank of Guatemala, to Minister of Agriculture. April 18, 1947. Min. Ag. Leg. 1886. AGCA. Guatemala.
[89] Ibid.
[90] Minutes from Committee for Agriculture for Santa Rosa de Lima, Santa Rosa. August 25, 1947. Min Ag 1886. AGCA. Guatemala.

The CHN claimed that they had already established 11 credit cooperatives and multiple credit agencies across Guatemala, which had collectively loaned Q230, 700 in credits to farmers and extended a further Q74, 710 to cooperatives and collectives.[91] The rising demand for credit indicated that rural credit agencies were still too scattered to service farmers across Guatemala. The scarcity of rural capital—or at least capital borrowed at fair rates—was perceived by many small growers and the government as a barrier to development. Without capital, campesinos struggled to buy tools, fertilizers and seeds that were increasingly required to compete against large, heavily capitalized farms.

Conclusion

By 1948, it was clear that the Arévalo administration's failure to implement a clear and comprehensive rural reform policy had hindered agrarian modernization efforts. The Ministry of Agriculture had successfully established a network of agricultural agents that greatly expanded the presence and authority of the Arévalo administration across rural Guatemala. The government had some success expanding its rural credit program and controlling the prices of new exports, but the ad hoc nature of these efforts indicates that the state lacked a clear policy on rural economic issues. As Urrutia remarked in 1945, the Guatemalan government had to decide if it was going to regulate the economy or let large landowners and industrialists dictate economic affairs. The compromises worked out by the Sierra and the Ministry of Economy and Labour around price controls indicated a clear hesitancy to stringently regulate Guatemala's financial and landowning elite. The Arévalo administration lacked the political power to openly challenge Guatemalan elites and moderates were also worried that structural reforms—credit programs, price controls, and land reform—would empower the country's indigenous majority.

Cindy Forster has argued that during the Arévalo administration the "state stood aloof from the demands of its poorest citizens." She argues that colonization schemes avoided the question of land reform and labour inspectors only gingerly regulated large landowners. The Labour Code was widely criticized by labour organizers and progressives who believed that Arévalo had actively courted the good favor of Guatemalan elites by preventing rural unions that had less than 500 members. Forster argues that labour inspectors were largely powerless because they needed landowner permission to make a ruling. Yet they remained highly visible, travelling

[91] Dependencia del Crédito Hipotecario Nacional de Guatemala. October 2, 1947. Min Ag. 1886. AGCA. Guatemala.

through rural Guatemala "like missionaries armed with the Labour Code and little else."[92] This description of is reminiscent of the General Agents of Agriculture whom the Ministry of Agriculture dubbed apostles on a crusade to stop soil erosion. However, the similarities are not complete. Unlike labour inspectors, when General Agents of Agriculture were rebuffed by large landowners many began working closely with smaller farmers and campesinos. As they laboured to propagate new agricultural techniques and technologies throughout the countryside, agents were often surprised by campesinos who eagerly engaged with state-led modernization efforts. Importantly, campesinos adopted new crops and tools when they fit with local priorities.

Though the Arévalo administration was divided on the best approach to rural development, technicians who worked closely with the peasantry came to appreciate the limitations of technical aid and they pushed for financial and land reforms that empowered small growers and undermined the power of rural elites. Though agricultural agents often shared closer class and cultural ties with large landowners than campesinos, but as they travelled through the countryside many came to appreciate the industry and resolve of small producers.[93] The rapid spread of Committees for Agriculture, Livestock and Rural Industry also helped defined the Ministry of Agriculture's knowledge about the countryside, since they allowed local communities to bypass sometimes hostile municipal and departmental authorities and present their requests directly to the Arévalo administration. Although they did not always fulfill the requests made by Committees, the Ministry of Agriculture responded quickly and sympathetically to questions and requests from the countryside. They even lobbied other government agencies to secure rapid results for communities that petitioned the Ministry for assistance. These Committees and the agents whom they worked alongside, succeeded when they framed their demands to the state in the language of productivity and progress.

Agents had successfully established the state's presence throughout rural Guatemala by introducing new productive technologies, reporting on local conflicts and encouraging the development of Committees for Agriculture. However, they often confronted thorny political, social and environmental problems that defied simple technical fixes. Some progressive agents began to push for more expansive power, but policymakers worried that turning agents into

[92] Arévalo first instituted this restriction in 1945, through an executive order. Forster, *The Time of Freedom*, 156.
[93] On the importance of kinship ties and the role they played in limiting the efficacy of labor inspectors see Forster, 159.

economists and local power brokers would undermine their efficacy on productivity issues. This might also further fracture the countryside by creating ad-hoc economic policy where the success of small farmers was dictated by the efficacy of their Agricultural Agent. On behalf of the Department of Rural Economy, Leopoldo Zeissig encouraged the government to instead create a new rural development institution with a broader mandate and more powers than the Department for Extension and Agricultural Development. "We have to consider," wrote Zeissig, "that the services of agricultural extension are new in Guatemala and they have ahead a field so wide as to be virgin and…it would be useless to shift the energies and time of the General Agents in the area of rural economy, which is a different phase."[94] He believed that agents needed to focus on technical aid while another, more powerful agency addressed the systemic problems of inequality, speculation and hoarding agents identified as barriers to rural development.[95]

Despite the evident shortcomings of agrarian policy prior in the 1940s, it is clear that policy makers understood the need for further diversification of Guatemala's anemic agrarian economy. Yet, stimulating the adoption of new export crops and modern agricultural techniques required a nuanced understanding of both landscape and people that the Arévalo administration initially lacked. General Agents of Agriculture evangelized modernization throughout rural Guatemala, but they also gave officials in the Ministry of Agriculture unprecedented insight into the local environmental and political constraints on production. They also fostered the growth Committees for Agriculture, which became new vehicles for rural organizing.

Without sustained pressure from indigenous campesinos agricultural extension would likely have remained trapped in the search for efficiency: higher yielding crops, mechanization and more effective distribution of credits, tools and inputs. Although some of the new rural development experts acknowledged the necessity for land and financial reform, they focused initially on increasing yields and encouraging new crops. Committees for Agriculture used their privileged access to the state to request tools, seeds and credit, but they also asked the Ministry of Agriculture to address systemic problems like credit and land shortages. Although Ministry officials tried to quickly deal with technical problems, they lacked the tools and political clout to

[94] Leopold Zeissig, Division of Rural Economy, to Director General of Agriculture. August 26, 1947. Min. Ag. 1887. AGCA. Guatemala.

[95] Zeissig was a contributor and organizer in early issues of *Monitor Del Infop*. He also wrote published several books including Leopoldo Zeissig, *Guatemala: Paraíso Perdido*, (Guatemala: Imprenta Hispania, 1946), a report on Guatemala's countryside undertaken with Argentinian Engineer Núñez Aguilar. Aguilar was known to Arévalo and a key advisor of the Ministry of Agriculture who was involved in the conceptualization of INFOP.

implement a more expansive rural development agenda. Their outreach efforts did demonstrate that there was significant enthusiasm for change amongst campesinos. The government had to find a vehicle for creating substantive social-economic change that cut through party politics. Their answer was INFOP, a semi-autonomous government agency that had a broad mandate to rapidly develop Guatemala by challenging the financial, technological and political barriers to modernization. INFOP's mandate was a reaction to the limitations of agriculture extension as a form of rural development.

Chapter 4: "Produce More to Live Better"

In late August of 1949, officials from Latin American and Caribbean countries met with representatives of the United Nations Food and Agriculture Organization (UNFAO) and the Inter-American Institute for Agricultural Sciences (IICA) in Costa Rica to discuss the challenges of extension work and share successful approaches.[1] Guatemalans were active participants in the conference, which reiterated the importance of extension work in rural countries "where the majority of the national income is derived from the soil, where a majority of the people are dedicated to agriculture as means to life and source of subsistence."[2] Though Guatemalan reformers had encountered serious political and economic challenges to modernization, their extension efforts pushed the boundaries of rural development. They had engaged communities as technicians, but many became advocates pushing for economic and political reforms. They also helped organize Committees for Agriculture, which became vehicles for remote communities to engage the state directly.

These new responsibilities fit the expansive definition of rural extension advanced at the Conference, where participants identified increased agricultural productivity as the precursor to improvements in rural nutrition, health and education. A collected volume on the conference encouraged rural development experts to "work *with* the people at the community level, not by distributing relief, [but] by promoting self-help and the development of rural organizations."[3] Experts, however, still had an important role to play in the development of the countryside because they offered the state detailed insight into social, economic and environmental challenges to development. Moreover, technicians and extension agents could quicken the pace of modernization by disseminating discoveries made in agricultural research stations. The goal of rural development and extension, concluded conference participants, was to enable rural

[1] Also in attendance were representatives from the United States and various international organizations including the Holy See, OAS, Pan American Sanitary Bureau, and UNESCO.
[2] "Informe de la Conferencia Técnica sobre Extension Agrícola: Preparada por la Organización de Alimentos de las Naciones Unidas y el Instituto Inter-Americano de Ciencias Agrícolas," August 23 to September 3, 1949. Min Ag. Leg. 421. AGCA. Guatemala.
[3] *Educational Approaches to Rural Welfare: Papers Submitted to the Technical Meeting on Agricultural Extension, Turrialba, Costa Rica* (Turrialba: Food and Agriculture Organization of the United Nation and Inter-American Institute of Agricultural Sciences, 1949).

communities to secure "improvements in individuals and communities, through their own efforts."[4]

The Conference encouraged developing countries to expand the state's presence in the countryside with new government offices and state agents so that citizens began to trust the government. This ideal, however, was problematic in Guatemala where the state was relatively weak and the countryside was wracked by political factionalism. Committees for Agriculture and extension agents could not always count on local or even national political support for their efforts to improve rural wellbeing. The Conference criticized poorly planned rural development initiatives which were often scuttled by the conflicting goals of different ministries and international organizations working for the wellbeing of the rural population. To avoid confusion and waste, participating countries were encouraged to found a coordinating body for rural affairs: "because the needs of rural inhabitants are urgent and the resources available to confront those needs are limited."[5] Guatemalan reformers anticipated this suggestion and had begun planning for their own, semi-autonomous development agency in 1947.

This chapter examines the creation and early years of the Institute for Encouraging Production, a powerful government organization that was dedicated to rural development. The institute stimulated modernization with targeted loans and a strong focus on technical assistance for famers, large and small. INFOP has not played an important role in historical accounts about the Revolution, but it greatly facilitated the spread of new agrarian technologies, encouraged new exports like cotton and transformed the financial landscape. INFOP laid the groundwork for the 1952 agrarian reform by demonstrating the viability of the Pacific Coast as a new agricultural frontier. The institute funded agricultural research that defined and quantified a poorly understood agrarian region that was dominated by large, undercapitalized plantations. INFOP technicians experimented with new crops and forms of land tenure on their large, experimental farms. These controlled spaces were utilized to demonstrate the productive potential of modernization on the Pacific Coast and the viability of a mixed farming landscape. The institute also used loans to stimulate crop diversification on large farms, an initiative which led to the emergence of new modernization advocates including the future President, Jacobo Arbenz.

[4] "Informe de la Conferencia Técnica sobre Extension Agricola: Preparada por la Organización de Alimentos de las Naciones Unidas y el Instituto Inter-Americano de Ciencias Agricolas," August 23 to September 3, 1949. Min Ag. Leg. 421. AGCA. Guatemala.
[5] Ibid.

In October 1949, large swathes of Guatemala were devastated by tropical rainstorms which unleashed landslides and unprecedented flooding. INFOP reacted quickly to the disaster, distributing new, hybridized corn and cotton seeds as part of its emergency response effort. The storms drew national attention to the dangers of soil erosion and deforestation, where previously inundations and landslides had been episodic and localized. INFOP and the Ministry of Agriculture pushed for coastal colonization and resettlement initiatives, which promised to transform large extents of forest and pastures into productive farmland. The Guatemalan government received robust support for this agenda from the International Bank for Reconstruction and Development. INFOP continued to promote the viability of industrial agriculture on the Pacific Coast, but they also emphasized the importance of a diversified agrarian landscape throughout the country.

To prevent further disasters, INFOP encouraged the Guatemalans to rethink land tenure and replace private property with a more sustainable alternative called usufruct. They argued that usufruct was a flexible form of land tenure that promoted conservation. Under this model, the state retained the rights to the land but campesinos were given lifelong rights to farm the land. Upon their death, the land would revert to the state. INFOP experts argued that the usufruct model would encourage campesinos to recognize their responsibilities as stewards who should sustain soil fertility for future generations. Usufruct also reinforced the power of the Revolutionary state in the countryside, because it required campesinos to consult experts about the best strategies for increasing production while conserving natural resources. Notably, most of the land given out to campesinos under the 1952 Agrarian Reform Law was offered in lifelong usufruct. Conservative opponents of INFOP and the Revolution attacked usufruct as a fundamentally inefficient form of land use that also demonstrated the government's 'communist' tendencies. INFOP, thus, demonstrated the viability of coastal resettlement and modernization and they actively experimented with new models of land tenure that were intended to balance productivity with the wellbeing of farmers and the land they farmed.

The institute's role has been neglected because it was overshadowed by the agrarian reform and it left few distinctive archival records. It was also maligned by Guatemalan elites after the coup who believed it favored Arbenz and other influential progressives with loans. There were minor incidents of political favoritism during the revolution, but overall INFOP effectively carried out its mandate to diversify exports, facilitate agricultural credits and improve

food production. The Institute managed to retain its reputation for independence, effectiveness and impartiality until the 1954 coup. American economists John H. Alder, Eugene R. Schlesinger and Ernest C. Olson concluded that the "absence of direct government intervention" in INFOP indicated that the government "has managed to translate into reality the legal concept of administrative autonomy."[6]

This analysis comes with an important caveat. Over the long-term, the chemical dependent model of cotton cultivation that INFOP promoted on the Pacific Coast had devastating consequences for ecosystems and labourers. During the Revolution, INFOP agronomist tried to limit the need for costly pesticides by promoting conservation measures, including crop rotations.[7] However, their end goal was to foster the development of a new, productive annual that would rapidly create a new class of small farmers. To this end, INFOP and other government agencies helped campesinos access the seeds, fertilizers and pesticides they needed. The government also moved to regulate the cotton industry, to control the risk of pests. After the Revolution, the government continued to fund cotton growers through INFOP but they stopped measures that helped campesinos farm cotton and reduced efforts to control pesticide use. Reflecting on INFOP's role in cotton production during the 1950s and 1960s, American anthropologist Richard Adams criticized government support for cotton because it empowered a wealthy minority and caused significant environmental damages. "[W]hat superficially may appear to be a healthy sign of growth," warned Adams, "is also a manifestation of a continuing tendency to lay waste to the environment for the profit of a very small segment of society."[8] In their enthusiasm for modern crops and techniques, INFOP promoted the spread of a model of agriculture that prioritized productivity as a means of achieving equality. They neglected, however, to consider the long-term implications of a system of agriculture that dependent heavily on external inputs of chemicals.

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[6] John H. Adler, Eugene R. Schlesinger and Ernest C. Olson, *Public Finance and Economic Development in Guatemala*, (Stanford University Press: Stanford, California, 1952), 266.

[7] These initiatives anticipated parts of the integrated pest control approach that was later promoted by a 1977 ICAITI report that criticized the human and environmental costs of cotton production. Central American Research Institute for Industry, *An Environmental and Economic Study of the Consequences of Pesticide Use in Central American Cotton Production: Final Report* (Guatemala: ICAITI, 1977), 3.

[8] Richard Newbold Adams, *Crucifixion by Power: Essays on Guatemalan National Social Structure, 1944-1966* (Austin: University of Texas Press, 1970), 379.

"Produce More to Live Better"

As the limitations of agricultural extension work became evident, the Guatemalan government began planning for a powerful development institution that could cut through politics and rapidly modernize rural Guatemala. The Bank of Guatemala began designing a new development organization in 1947. The future Institute for Encouraging Production, or INFOP, was initially divided into two sections: one focused on banking "to widen and democratize productive credit" and the other on agricultural development.[9] Although housing was subsequently added to INFOP's responsibilities, throughout the revolution the institute focused most of its efforts on credits and technical assistance for farmers. To avoid the political divisions which had hindered agricultural extension efforts, the institute was given financial and administrative autonomy. It was also led by experienced technicians who could leverage their scientific and financial expertise to justify rural interventions.[10]

In 1948, Congress passed Decree No. 553 and officially created INFOP. To ensure its independence, INFOP was given an initial capital allotment of 6.5 million Quetzales and the government pledged to fund the Institute with annual budget appropriations that ranged from 2 to 6 percent of the national budget. This arrangement quickly proved to be a point of contention and after 1950 the government consistently neglected to set aside the proper allocations for INFOP. Nevertheless, the organization was able to maintain its capital with savings and credit programs that encouraged agricultural production.[11] INFOP's robust administrative structure was also designed to protect its autonomy, while sharing information with other government departments. There were three executive layers, including a Superior Directive Council that guided and approved INFOP policy, an Executive Directorate which supervised and directed the institute's policies and a Managerial branch, with Directors who administered Credits, Agricultural Development and Housing Initiatives. Finally, there was a Technical Council which offered expert advice on INFOP's development schemes.[12] As the Arévalo and Arbenz government tried to cope with frenetic political activity, INFOP's financial and administrative structure enabled it to remain remarkably focused throughout the revolution.

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[9] W.G. Casseres to Fortescue. Gran Hotel Continental, Guatemala. December 8, 1947. Latin American Regional Office (15) RG. 15 Box 28. "Reports to HQ" UN FAO Archive. Rome.
[10] Zeissig had called for technician-led development in 1945. Zeissig, 76.
[11] Adler et. al., *Public Finance and Economic Development in Guatemala*, 264; Kalman Silvert, *Guatemala: National and Local Government Since 1944*, 37.
[12] Silvert, *Guatemala*, 38.

The Superior Directive Council was the least stable aspect of INFOP. There were permanent members from key government ministries, including Agriculture and Economy, the Bank of Guatemala and the National Mortgage Credit (CHN). The Council also included representatives from industry, agriculture and two labour members, the latter were chosen by the President. Although membership in this group changed over the course of the Revolution, several moderates remained throughout including Dr. Manuel Noriega Morales, who served as the representative for the Bank of Guatemala and then Minister of Economy. Influential progressive Augusto Charnaud McDonald and labour leaders Amor Velasco and Manuel Pinto Usaga also served on this oversight committee until 1952.[13]

Their departure from INFOP was closely tied to emergent political conflicts in the PAR, which coalesced around Charnaud McDonald's support for the new National Peasant Confederation of Guatemala (CNCG). Critics worried that this peasant league would enable Charnaud and his supporters, including Amor Velasco, to consolidate political power. Charnaud resigned from the PAR in 1951 and formed a new Socialist Party. The President replaced the outgoing labour representatives with José Luis Caceros and José Luis Ramos, both influential members of the new communist party, the Guatemalan Labour Party (PGT).[14] However, this 1952 shift also saw the inclusion of Roberto Berger—a leading cotton grower after the Revolution—as the agricultural representative to the Superior Directive Council.[15] The moderate Nicolás Brol also continued to represent the Ministry of Agriculture.[16] The effect of these transitions was a turn toward the centre and a retreat from the overtly revolutionary language of the early INFOP years. During this period, the Institute continued to be respected nationally and internationally for its effective credit and agricultural development activities.[17]

One of the key factors ensuring INFOP's institutional focus was the Executive Directorate that was led by Ángel Nuñez Aguilar until early 1954. He was an Argentinian

[13] Handy, *Revolution*, 42.
[14] José Luis Ramos was an active in the CGTG and the CNCG. He was the head of the PGT's Peasant Commission (1952-54) and CGTG representative on the National Agrarian Council. Ronald M. Schneider, *Communism in Guatemala: 1944-1954* (New York: Octagon Books, 1979), 96. Handy, *Revolution*, 42.
[15] He served as President of AGUAPA. See Chapter 6 for more details. "Letter to Junta General," *Informativo Algodonero* no. 4 (March 1956): 2.
[16] For more on Brol see Schneider, *Communism in Guatemala*, 235. Handy, *Revolution*, 87. Glejesis, *Shattered Hope*, 73, 209-210.
[17] Adler et. al., *Public Finance and Economic Development in Guatemala*, 266.

engineer who had collaborated with Leopold Zeissig on *Paraíso Perdido* in 1945.[18] Ángel Nuñez Aguilar met Arévalo in Argentina, where he also cultivated contacts with the FAO. After President Arévalo was elected, Nuñez Aguilar came to Guatemala and became the Ministry of Agriculture's main technical advisor. He was instrumental in the planning of INFOP and courted international agencies including the FAO for technical assistance. He told FAO liaison W.G. Casseres in confidence that Guatemala wanted to recruit Latin American technicians "already familiar with tropical agriculture, and not recent graduates from U.S. colleges who come to win their spurs [and] learn agriculture [and] then leave." Casseres supported this "novel and refreshing point of view" because it gave Guatemala more freedom to implement economic changes without American intervention.[19] He warned his superiors that other Central American organizations which accepted US technical assistance were beholden to their US funders and burdened by a surplus of US agronomists.[20] INFOP tried to forge a distinctive path, which recognized the transformative power of technical and financial assistance but defended the institution's political autonomy.

The organization's commitment to modernization as a means of increasing rural productivity and wellbeing was clearly communicated by its motto: "Produce More to Live Better." Shortly after it was created, INFOP officials created a strategic plan that identified areas where the institute could make significant changes. First, officials sought to increase yields of corn and other essential foods so that they could control the rising cost of living threatening to destabilize the government. This initiative was complemented by efforts to make it easier for small borrowers to obtain credit so that they could enter the market as small farmers (Figure 8). Second, INFOP tried to diversify export crops and reduce the government's dependency on coffee. This was accompanied by an initiative to encourage domestic crops including cotton, reducing the need for imports and stopping the outflow of capital. Finally, the institute invested

[18] He was actually Honduran, but had lived most of his life in Argentina. Casseres also reported that the government was receiving advice from Juan Pablo Duque, a Colombian coffee expert.
[19] Personal Letter from W.G. Casseres to Fortescue, Decembre 8, 1947, Gran Hotel Continental, Guatemala, LA Record Group 15 LAT [Latin American Regional Office] Box 28, "Reports to HQ." UN FAO-Rome.
[20] He focused on the Inter American Institute for Agricultural Sciences (IIAS) in Turrialba, Costa Rica. The IIAS was created by the Pan American Union as "a child of all the American republics," but its dependency on US staff and funding meant it was known as a "predominately United States organization." Casseres noted that the IIAS was frequently confused with the American-dominated Institute of Inter-American Affairs and the Office of Foreign Agricultural relations. Casseres encouraged Guatemalans to work with the IIAS on an informal basis, guided by shared interests. "Report on Field Trip, August 10-29, 1947", 4 September 1947, 11. LA Record Group 15 LAT [Latin American Regional Office] Box 28, "Reports to HQ" UN FAO-Rome.

heavily in research so that they could better understand the problems facing the country before they made interventions to improve the living standards for Guatemalans.[21]

The *Monitor Del INFOP* was the organization's official organ and was organized and edited by Leopold Zeissig. The *Monitor*'s editorials and information pieces conveyed the organization's vision for rural development, which focused on improving rural wellbeing through agricultural modernization and financial reforms. The editors claimed that the organization was the counterpart to the democratic Revolution initiated in 1944, which would create substantive material improvements in the lives of Guatemalans.

> By freely elected powers, through the press, the parties and the unions, the people of Guatemala exercise their right to live free. Through INFOP they exercise their right to live better. Or to say it in one of their concise slogans: "Better Bread, Better Clothes, Better Homes.[22]

The *Monitor* argued that a revolution confined to political reforms would create a formal democracy where people might have the right to vote but, quoting French writer Anatole France, they also had to die of hunger beneath the bridges. They warned that this apparent democracy would also be "held prisoner by the forces of privilege" while "the popular majority remain debased by backwardness and poverty." To secure lasting change, Guatemalans had to reject monoculture and embrace crop diversification and new production techniques. "Or said another way," concluded the editorial, "create wealth, emancipate her from monoculture and organize her [agriculture] methodically and scientifically." [23]

INFOP officials immediately focused on gathering information about the countryside they were supposed to transform. The institute co-funded a wide ranging soil classification and mapping project by US specialist Charles Simmons, which is still used as basic reference material at the Universidad de San Carlos. Though the final edition was only published in 1964, information was available from study in the late 1940s and informed decisions about development initiatives in the Motagua Valley and the Pacific Coast. Another cornerstone study was Lesley Holdridge's 1950 study of the economic potential of Guatemala's diverse forests that

[21] Alder et. al., *Public Finance and Economic Development in Guatemala*, 264; "Razones y Propositos de Este Publicación," *Monitor Del INFOP,* No 1-2, (1950): 1.
[22] The original translation for the adage was "Mejor pan, mejor vestido y mejor techo." "Mision y Sentido de INFOP," *Monitor del INFOP* Vol 2: No. 7 (1951): 1.
[23] Ibid.

focused especially on the untapped potential of the Petén.[24] Studies and reports were an attempt to make Guatemala's varied landscape legible to the state as it planned and implement sweeping social and agrarian reforms.

Prior to 1950s, reports from rural governors, state agents and foreigners had produced a partial and fractured vision of Guatemala's agrarian landscape, shaped by ethnic prejudice and political interests. Agricultural agents began to feed the state more detailed information about soil composition, forest cover and crop yields, but their reports lacked scientific rigor and the utility of the reports depended greatly on the capability of agents. These anecdotal reports produced a fractured vision of the country that inhibited the state's ability to govern. This situation changed considerably with the advent of the modern census, aerial photography and scientific assessments of land and land use. Though these forms of knowing were also partial and biased, they gave Guatemalan experts the ability to plan for sweeping agrarian change and a perceived moral authority derived from their use of science to inform planning.[25]

[24] Both studies thanked INFOP for funding and facilitating fieldwork.
[25] Scott, *Seeing Like a State*, 3-5.

Figure 8: Maize as commodity, "Plant Today to Harvest Tomorrow: Save in INFOP"[26]

INFOP's emphasis on gathering information before making changes to the countryside was inspired by José Cecilio del Valle. The 19th century Central American thinker and politician advocated for statistics as a cornerstone for good rule. "A government that does not know the

[26] Back cover, *Monitor del INFOP*, Vol 2: No. 7 (1951).

lands of the Nation it governs," wrote del Valle, "nor the fruits it produces, nor the men who populate her, is a blind man that does not see the house where he lives, an administrator who in order not to risk action without knowledge, must be idle out of prudence."[27] Del Valle believed that the Guatemalan government could not rule effectively until it had a working knowledge of the population, crop production, and landscape. The Guatemalan government finally answered this call in the late 1940s, when the government coordinated with the UN Food and Agriculture Organization to create rigorous, standardized surveys of agriculture and population.

Though department level surveys of agrarian holdings had begun as early as 1883, no systemic agricultural census had been undertaken prior to 1950. Before the census could even begin, the Directorate-General of Statistics had to update and refine existing maps of Guatemala's political boundaries and land holdings. Even so, 10% of the Republic was left effectively unmapped and the government depended on local authorities to quickly outline urban boundaries and create sketches of these remaining municipalities.[28] Over a century after independence and the formation of the Guatemalan state, many corners of the country remained relatively unknown to government agents. The 1950 agricultural census and other INFOP-funded studies attempted to rectify the lack of rigor in previous data-collection efforts that depended on local authorities and landowners to submit their information to the state. Landowners could easily omit or misrepresent information about crops, yields and land cover which the government used for taxation and governance purposes. [29]

The census and INFOP-funded studies generated new information about the countryside that enabled the Guatemalan government to deploy a coherent national agrarian policy. At the same time, a cadre of technicians were trained and dispatched to survey and measure lands across Guatemala. In 1949, the UN FAO pledged to train and assist Guatemalan technicians so that they could ensure the "conservation of forests, soil, and water" resources necessary for the

[27] Manuel Rubio Sanchez, "Desenvolvimiento de las Estadísticas Agropecuarias en la República de Guatemala," *Monitor del INFOP* Vol 4: No. 16 (1953).
[28] In the introduction to the agrarian census, readers were directed to consult the "Censo cafetalero de 1940" "Presentacion," *Censo Agropecuario*, Vol. 1 (1950): 4.
[29] Government officials could also manipulate data to serve their interests. The introduction to Guatemala's 6th population census, published in 1954, emphasized the inconsistency of previous population surveys due to data manipulation. In the 4th census of population of 1921, a carefully designed census form was undermined by faulty tabulations that inflated the population by 15% to account for citizens they could not count. In 1940, the President forced government officials to inflate the population and the 1950 population census found that there were 2,790,868 inhabitants: less than had supposedly lived in Guatemala in 1940. See *VI Censo de Poblacion*, Vol. 2 (1950).

country to attain "higher levels of economic and social welfare for its people."[30] The government also established a Faculty of Agronomy at the Universidad de San Carlos in 1950, which was partly a response to devastating floods in 1949.[31] This greatly expanded an ongoing effort to train agronomists by the Instituto Agropecuario Nacional (IAN) and the Ministry of Agriculture. [32] New experts and a profusion of studies were the necessary foundation for effective rural reform. These same agronomists, technicians and planners would be called on to judge the merits of campesino land claims made during the agrarian reform. Though INFOP did not itself transform Guatemalan politics, it established the basis for surveillance, planning, and financial initiatives that made the agrarian reform of 1952 plausible.

Defining the countryside through scientific study and quantitative measurement was INFOP's first step toward realizing their motto: "Produce more to live better." Information about the countryside—crop yields, rotations, and labour practices—was subsumed into their larger political agenda which sought to increase agrarian productivity and rapidly industrialize Guatemala. Yet INFOP, like the Ministry of Agriculture, still struggled to convince Guatemala's landed elite about the necessity of modernization. Most wealthy landowners preferred to plant well known exports like coffee, eschewing the financial risk inherent in rapid diversification. Less established landowners—those not of the landed elite or new immigrants—were more likely to gamble on new exports, and benefited more from the financial incentives and technical assistance offered by INFOP. This was the case with the future President Jacobo Arbenz, who bought the El Cajón plantation with his wife in the 1940s and moved quickly to diversify crops and modernize labour relations.

"Magnificent machinery"

The modernization of coastal agriculture depended initially on adventurous landowners, willing to experiment with different crop varieties, land use strategies and labour regimes. El Cajón, the Arbenz family farm, was a key example of agrarian modernization led by large

[30] "Agreement on Technical Assistance Between the Food and Agriculture Organization and Government of Guatemala," Min Ag. Leg 421. AGCA. Guatemala.
[31] H.M. Dressler, "Cartas de Antigua: ¿Por qué no Tenemos Facultad de Agronomía?" *El Imparcial*, October 26, 1949.
[32] IAN was more conservative than INFOP, focused on experimentation with agricultural crops, and had a good relationship with the US throughout the Revolutionary period. In 1945, the United States Department of Agriculture signed a convention with the Instituto Agropecuario Nacional (IAN), supporting investigation of key exports crops including rubber and cattle. Between 1946 and 1953, twenty-three students received scholarships allowing them to study agriculture in the United States. Yurrita Elgueta, "Agricultura", 392-393.

landowners and it demonstrated the challenges that modernizers faced when trying to reshape labour relations and crop regimes. Modernization was not universally perceived as a benefit. Campesinos who had longstanding labour relations with coastal planters sometimes rejected a straightforward wage-labour relationship because it supplanted important customary entitlements like access to land and food rations.[33] The disconnection between the plan for rural modernization and the messy reality was evident at El Cajón, The administrator Pablo Rohr managed daily affairs on the plantation and he struggled to explain crop failures, machine breakdowns and worker resistance to the idealistic Arbenz family who did not live on the plantation. Correspondence between the administrator of El Cajón and the Arbenz family that runs from 1948 and 1950, highlights the struggle of 'progressive farmers' to balance financial solvency, equitable labour relations, and modernization. Loans and technical assistance from INFOP facilitated diversification across Guatemala and especially the Pacific Coast, but they did not remove the financial and labour costs of diversification. Though Arbenz advocated an end to 'feudal' farms, the limited capacity of the Guatemalan state and poor rural infrastructure slowed modernization efforts and perpetuated a dependency on migrant labour.

El Cajón was bought by Arbenz in the 1940s and the family began experimenting with modern crops immediately. Inspired by the success of cotton in El Salvador, the Arbenz family planted an experimental plot of 10 manzanas in their new farm. The first planting failed rather spectacularly. Arbenz's wife Maria Vilanova—who penned the majority of the letters to the plantation under the pseudonym *La Secretaría*—claimed this was due to lack of close supervision by an increasingly busy Arbenz and the failure to control pests. When Vilanova and Arbenz visited the plantation, what appeared at first to be a thriving stand of cotton field was infested with caterpillars. In her memoir, Maria Vilanova wrote, "we heard a very strong rustling [murmullo] coming from the plantation, which was beginning to wither." Close examination of the cotton revealed thousands of caterpillars, "who chewed the plants giving themselves a great feast. We had to burn it all." Though the plantation had been fumigated, Maria Vilanova's

[33] Though campesinos were inspired to action by the Arbenz administation, modernization also frightened peasants who were poor and worried about changes that might further undermine their fiscal and bodily security. Though 'feudal' relations between landowner and campesinos were highly exploitative, peasants carved out small spaces of autonomy or privilege based on their work ethic and labor value to the plantation. Jacobo Arbenz, "La Politica Economica en el Informe Presidencial," Vol. 5: No. 20 (1954). For further discussion of community, labor and ethnic conflicts engendered by the Agrarian Reform process see Handy, *Gift of the Devil*, 130 and Handy, *Revolution in the Countryside*, 120-127.

Brother Antonio—an experienced cotton planter in El Salvador—believed that the Arbenz's had sprayed too little and at the wrong time.[34]

Cotton is very sensitive to changes in precipitation and farmers often gambled that good weather would ensure high returns from sales to international buyers. Speculation was exacerbated because cotton was an annual, unlike coffee which required 5 to 7 years before a plant would produce for market. Price controls mitigated speculation, but the threat of disease remained and farmers applied pesticides generously in an attempt to prevent crop losses. Careless application of pesticides had a negative long-term impact on farm finances because it hastened pest resistance and inflated crop maintenance costs. Arbenz briefly experimented with alternative growing strategies that increased the resiliency of cotton plants, including inter-planting which was common in Indigenous communities.[35] In September 1949, cropland was divided evenly between cotton, corn and inter-planted fields. Inter-planting and more mainstream options like fallowing were not widely adopted because they limited the number of plants that could be planted per year in a given area, lowering possible returns.[36]

Despite the upsetting failure of their first cotton field, the Arbenz family resolved once again to plant cotton. Between 1947 and 1949, Arbenz began planning for a dramatic expansion of El Cajón's productive capacity. Cotton was to be the centerpiece of the farm. An early memorandum estimated that they would clear 1000 manzanas in the coming year where they would plant 400 manzanas of cotton, 300 manzanas of rice, 200 manzanas for corn, and 100 manzanas for sesame.[37] Compared to other crops, cotton was prohibitively expensive to plant and care for since it required a heavy investment in pesticides and hybridized seeds. Of the 51.34 Quetzales invested in a manzana of cotton, 5 Quetzales were spent on special seed stock—an

[34] Pacific Coast cotton plantations required fumigation for the first 10 days after sprouting ("de nacido") and frequent fumigation thereafter. María Vilanova de Arbenz, "El Soldado del Pueblo," p. 98. Archivo de Jacobo Arbenz Guzmán, Serie Borradores de Libros. Archivo Inedito. CIRMA. Antigua, Guatemala.

[35] In 1948, an outbreak of caterpillars in one of El Cajón's cotton fields required urgent application of pesticides. Nearby corn fields were flourishing with minimal inputs and normal management. "Letter to Coronel Jacobo Arbenz from Pablo Rohr, Jr.," August 2, 1949; "Letter to Coronel Jacobo Arbenz from Rafael Lot," November 26, 1948. Archivo de Jacobo Arbenz Guzmán, Finca El Cajón. Archivo Inedito. CIRMA. Antigua, Guatemala. (Hereafter Arbenz Papers)

[36] The plantation planted 18 Manzanas of cotton, 16 manzanas of corn, and 13 manzanas of corn and cotton. "Letter to María Jerez R. from Pablo Rohr Jr., Finca 'El Cajón', September 30, 1949, Archivo de Jacobo Arbenz Guzmán, Finca El Cajón. Archivo Inedito. CIRMA. Antigua, Guatemala; "Report" 5 September, 1949. Finca El Cajón. Arbenz Papers.

[37] Arbenz imported 1400 kilograms of Delta Pine 14 cotton seed from El Salvador, disinfected to prevent the spread of plagues. "Memorandum" n/d Archivo de Jacobo Arbenz Guzmán, Finca El Cajón. Archivo Inedito. CIRMA. Antigua, Guatemala; "Certificado de Origen," n/d. Finca El Cajón. Arbenz Papers.

important consideration because poor quality cotton fibers ruined potential returns—20Q was spent on insecticides and 22Q on collecting the harvest. Unlike other crops, cotton was seeded by tractors but bolls were picked by hand to preserve value. Whereas tractors had to be repaired seasonal labourers were paid little and if they fell ill they could be readily replaced. These labour practices allowed farm operators to combine modern mechanization with more traditional forms of exploitation, ensuring high margins.[38]

Though chemicals represented cotton growers' largest and most volatile investment, labour costs could also escalate when crops were afflicted by disease. Fellow planter Minor Keilhauer, the owner of the nearby farm El Cerritos and the agricultural advisor on INFOP's Executive Directorate, informed Arbenz in early 1949 that average labour costs were determined on a piecemeal rate. On a normal plantation, labourers earned roughly 0.60Q per day but on a very productive plantation workers earned closer to 1Q a day because they could harvest five to six quintales of cotton a day. He warned that on a bad plantation, labour costs rose by up to 50% because workers needed to be paid more per pound to ensure they stayed to collect the remaining cotton bolls. "Naturally," wrote Keilhauer, "you have to consider that in a bad cotton field the workers have no desire to work in it, they do not make their daily work time and there are endless difficulties to harvest it."[39]

By 1949, 200 manzanas of cotton were registered at El Cajón and Arbenz—confident in cotton's potential—planned to plant another 800 manzanas with cotton.[40] Arbenz guessed the new crop would be five to ten times larger than his 1948 harvest.[41] INFOP recognized Arbenz as "one of the farmers dedicated to the cultivation of this important textile fiber," and contacted him for advice about the seed varieties and growing practices that would guarantee the best yield and highest quality fibers. Although Arbenz was enthused about cotton, he expressed frustration

[38] After cotton, the next most expensive crop was sesame, which cost Q26.34 per manzana, followed by rice, maize, and bananas. "Memorandum" n/d. Finca El Cajón. Arbenz Papers.
[39] Piece rates on a good plantation were 0.01Q per pound and 0.03Q per pound on a bad plantation. Good yields were estimated at 5 to 6 quintales of cotton per manzana. "Letter from Minor R. Keilhauer to Jacobo Arbenz," January 7, 1949. Noviembre 26, 1948. Finca El Cajón. Arbenz Papers.
[40] Registering and measuring cotton yields allowed the state to set import tariffs that wouldn't undercut factories that produced clothing with cotton. "Letter to Administator of El Cajón from Ramiro Aragón C., Director General de la Economía Nacional," 18 January, 1949. Finca El Cajón. Arbenz Papers.
[41] The yield for the 1948 crop was 5 quintales oro per manzana, with a total yield of 120 quintales. He estimated 500 to 1000 quintales for 1949. "Registro de Productores de Algodon" January 20, 1949, Archivo de Jacobo Arbenz Guzmán, Finca El Cajón. Archivo Inedito. CIRMA. Antigua, Guatemala. For complaints about pests and humidity affecting 1948 crop and a request for more pesticides, see "Letter to Jacobo Arbenz from Rafael Lot," November 26, 1948. Finca El Cajón. Arbenz Papers.

about the scarcity of capital available to farmers growing alternative crops. Planting new crops required heavy initial investment in new production technologies and farmers often had to wait several years before they harvested a successful crop. This delay between the receipt of funds and the return on investment was perilous for farms financed with loans bearing high interest rates or with short loan repayment windows.[42]

In the "Observations" section of the official registration form INFOP required cotton farmers to fill out, Arbenz criticized the terms on which he had borrowed from the Crédito Hipotecario Nacional. He borrowed from the CHN for a one year term, but in retrospect he recommended a longer term for potential lenders and borrowers because of high start-up cost and the risks associated with cotton planting.[43] In a letter to the head of INFOP, Arbenz asked for 75,000 Quetzales over 3 years which would allow him to pay off his CHN loan and plant 1,000 manzanas of cotton, rice, corn and sesame in El Cajón. As justification for the loan, he cited his dedication to clearing and planting new land. Using expensive new machinery, Arbenz had cleared 10 caballerias of land and 7 more were in the process of being cleared and readied for planting.[44]

The desire to efficiently cultivate new crops drove migration and labour recruitment throughout Guatemala. Highland communities often specialized in certain crops or acquired a reputation for hard work that encouraged landowners to pay a small premium for their services, in wages, rations, or housing. As the farm expanded in 1949, Pablo Rohr, El Cajón's full-time administrator, urged Arbenz to recruit labourers from the highland region of Santa Cruz el Quiché, "because the indigenous [worker] is the best worker."[45] Though workers from the

[42] Arbenz and another notable cotton farmer, Minor Keilhauer, established an association for cotton growers to raise capital to build a ginning plant and fund further planting. Keilhauer sought to turn INFOP, the principle lender, into an active investor into the newly incorporated Industrial Algodonera de Guatemala, S.A. (INDALSA) by paying back the loan through shares. "Letter to Coronel Jacobo Arbenz from Eduardo Motealegre C., Gerente, INFOP," April 25, 1949; "Letter to Jacobo Arbenz from p.p. Minor R. Keilhauer, signed by Frank Townson," Feb 21, 1949. Finca El Cajón. Arbenz Papers.

[43] "Registro de Productores de Algodon," January 20, 1949. Finca El Cajón. Arbenz Papers. For complaints about pests and humidity affecting 1948 crop and a request for more pesticides, see "Letter to Jacobo Arbenz from Rafael Lot," Noviembre 26, 1948. Finca El Cajón. Arbenz Papers.

[44] Arbenz estimated that the value of the farm rose from 125,000 to 200,000 Quetzales. (610) "Letter to Gerente del INFOP from Jacobo Arbenz," March 11, 1949. Finca El Cajón. Arbenz Papers.

[45] Despite this assertion, the expectations of laborers differed throughout the highlands. When Arbenz was petitioned by a labor contractor from Rabinal, Rohr encouraged him to ignore that offer. He believed that Rabinaleros were hardworking but they expected high wages because they often worked on United Fruit Company plantations in Tiquisate. "Letter to Jacobo Arbenz from Gabriel Castro Galeano, Rabinal." July 17 1949," Finca El Cajón. Arbenz Papers.

highlands had substantially less power and authority than Arbenz, the Minister of Defence and future President, they used their knowledge of crops, dedication to field work and reputation to negotiate terms of employment.[46] Their value to the farm lay in labour skill and their intimate knowledge of new cultivars: insight gained through training and thousands of hours of work time that created a pool of communal knowledge about best practices.

Rohr actively discouraged Arbenz from employing locals—plentiful and willing to work without rations—because they were not "good workers." He warned that temporary savings would be offset by productivity losses.[47] Facing labour shortages in the fall, Rohr relented lest the crop be lost and used workers from Siquinalá and Santa Lucía Cotzulmalguapa. He maintained that this was a "necessary evil" and emphasized his preference for workers from Quiché and even El Salvador.[48] He praised those from Quiché because they allegedly worked harder and were more obedient.[49] Eventually skilled workers from Quiché, Santo Tomas Chichicastenango and even Rabinal arrived on the farm looking to work, though they bargained for rations as a supplement to their wages.[50] The Arbenz family's preference for indigenous or Salvadorian labourers fostered ethnic tensions between El Cajón and surrounding municipalities.[51]

The apparent docility of highland workers vis-à-vis their coastal counterparts was a by-product of endemic highland poverty. Organized communities that migrated collectively to labour on farms could press for limited concessions, but more often migrants were anonymized and atomized by exploitative landowners. Their apparent cooperation was often an indication of

[46] As Cindy Forster notes, the Revolution opened up political space for plantation workers to protest the terms of their employment including the length of the workday. Forster, *Time of Freedom*, 150.
[47] "Letter to María Jerez R. from Pablor Rohr. Jr., Finca 'El Cajón," August 6, 1949 Finca El Cajón. Arbenz Papers.
[48] References to workers from El Salvador were sporadic but positive and an early reference indicated a connection to María's brother Tonio. "Letter to María Jerez R. from Rafael Lot, Finca El Cajón," n/d Finca El Cajón. Arbenz Papers; Gleijeses, *Shattered Hope*, 144-145.
[49] "Informe que la Señoría Secretaría Solicita para Rendirle al Coronel; al mismo tiempo lleva todos los datos del informe quincenal." Finca El Cajón. Arbenz Papers.
[50] Workers from Rabinal even came with their own "moldendera", a woman dedicated to making tortillas for workers. "Letter to María Jerez R. from Pablo Rohr Jr., Finca El Cajón" September 4, 1949, Finca El Cajón. Arbenz Papers.
[51] When local laborers began pressing for wage increases and complaining about work conditions, El Cajón's administrator Pablo Rohr encouraged Arbenz to dispense with lowland laborers offer highland workers housing and rations instead. Though Rohr was not eager to employ local labor, he was by all accounts an exemplary administrator. When he had to leave because of the illness of his son, workers urged Arbenz to keep him on. "Letter to Coronel Jacobo Arbenz from Benjamin López, Finca El Cajón," April 24, 1950; "Letter to Maria Jerez from Pablo Rohr, Finca El Cajón," July 8, 1950; "Letter to Coronel Jacobo Arbenz from Workers from Sanarate at Finca El Cajón," December 7, 1949; "Letter to Coronel Jacobo Arbenz from Workers of Finca El Cajón," April 19, 1950. Finca El Cajón. Arbenz Papers.

their isolation and their need for wages to pay off debts incurred with contractors. Local labourers, not tied to land and family in a far off location, had more incentive to organize and pressure employers and were often regarded as less pliable than their highland counterparts. Though highlanders were sought out, generalized labour shortages and the lack of a safety net encouraged lowland workers to organize for better terms of employment in a way that indigenous campesinos generally did not.[52]

The struggle to secure labour slowed agrarian diversification, farm expansion, and modernization. To regularize labour relations, the Arbenz family pushed for waged labour so that they could abolish customary-obligations like rations and housing. They maintained that paying high wages justified the denial of rations, but they had difficulty enforcing their rules on their own farm. In September 1949, corn prices rose and supplies grew scarce spurring workers from Sanarate to petition Rohr for corn to eat or rations they could buy. Rohr struggled to respect the Arbenz family's wishes but he urged them to consider the proposal lest they lose valuable labourers.[53] Rohr also asked Jacobo Arbenz to quickly improve housing on the plantation. During the heavy rains of 1949, Rohr reported that workers huddled in the corners of their *galeras* avoiding leaks. The Arbenz family responded sympathetically, asking Rohr to halt construction on open-style galeras that lasted only 8 to 10 years because they were saving for high quality housing.[54] Like many modernization and development initiatives, the Arbenz family's well-intentioned focus on the future left workers stuck waiting for the future to arrive.[55]

[52] Forster, *The Time of Freedom*, 117-135.

[53] "Letter to Pablo Rohr Jr. from La Secretaria," Sept 28, 1949; "Letter to Maria Jerez R. from Pablo Rohr Jr, Finca 'El Cajón,' Octubre 28, 1949; "Letter to Pablo Rohr Jr. from La Secretaría,"Octubre, 11, 1949. Finca El Cajón. Arbenz Papers.

[54] Maria Vilanova asked that campesinos maintain their land in their spare time instead of dedicated laborers to the task. "Letter to María Jerez R. from Pablo Rohr Jr., Finca El Cajón," September 17, 1949; "Letter to Pablo Rohr Jr. from La Secretaría," September 12, 1949. Finca El Cajón. Arbenz Papers.

[55] The Arbenz's were generally concerned about the health and well-being of their workers, but they stalled on needed improvements citing the costs associated with modernizing El Cajón. In June 1949, the Mayor Abel Ochoa of Santa Lucía Cotzumalguapa urged Arbenz to address housing issues. He argued that the health and security of workers was often sacrificed by farmers who invested instead in "stables, kennels, and pens and forget to protect workers with more or less decent houses no matter that they are the source of production for this farm and knowing that your life runs parallel with misery." "Letter to Pablo Rohr from La Secretaria," June 3, 1950; "Letter to Propietario de la Finca El Cajón from J. Abel Ochoa, Alcalde Municipal, Santa Lucía Cotzumalguapa," June 8, 1949. Finca El Cajón. Arbenz Papers.

The costs of maintaining labourers coupled with chronic shortages was an economic burden on farm finances and prevented long-term planning.[56] Mechanization was increasingly sought out by farmers as a way to minimize landowner dependency on labourers, whose availability, pliancy, and skill level was in constant flux. Rohr and the Arbenz family struggled to identify the right balance, with the latter emphasizing the ability of farm machinery and better administration to control labour costs. Maria Vilanova admonished Rohr for employing too many labourers and urged him to use the "magnificent machinery" which was "more efficient, quick and [used] less personnel." Rohr objected that the machinery was in disrepair and that machines could not perform delicate tasks like planting lemongrass and doubling corn, a routine practice meant to allow the cob to season and protect it from rains. When Rohr offered to resign, citing differences of opinion, María Vilanova reassured him that disagreements over farm management were normal, produced by the mismatch between reality and the Arbenz family's modernizing vision.[57]

Despite making a heavy investment in cotton production, by 1950 Arbenz abandoned the crop and ordered the plants destroyed after several bad harvests. After a brief experiment with sesame, El Cajón transitioned to new crops including citronella and lemongrass. Arbenz ordered Rohr to clear land and plant citronella through the winter, with the lofty goal of planting nearly 300 manzanas by the end of 1950.[58] The jarring transition from cotton to citronella surprised lenders like INFOP, who sent Arbenz a carefully phrased letter reminding him that his loan was only to be used for cotton.[59] INFOP's official policy was to promote crop diversification, but they quickly focused on cotton because it could be used by domestic textile producers and surplus could be sold for a high price on international markets. The future President's decision to abandon cotton was potentially embarrassing for the organization, but they did not want to publicly rebuke him because Arbenz was a powerful proponent of modernization.

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[56] El Cajón faced a rash of malaria cases in 1949, and the Arbenz's ordered Rohr to obtain medicine and medical treatment for workers. "Letter to Pablo Rohr, jr. from 'La Secretaria'," July 29, 1949. Finca El Cajón. Arbenz Papers.

[57] "Letter to Pablo Rohr Jr. from La Secretaria (Maria Jerez), Guatemala," September 12, 1949; "Letter to Pablo Rohr Jr. from La Secretaria (María Jerez), September 20, 1949; "Letter to María Jerez R. from Pablo Rohr Jr., Finca El Cajón," Noviembre 13, 1949; "Letter to María Jerez R. from Pablo Rohr Jr., Finca El Cajón," September 17, 1949. Finca El Cajón. Arbenz Papers.

[58] "Letter to María Jerez R. from Pablo Rohr Jr., Finca 'El Cajón', Septiembre 30, 1949; "Report" September 5, 1949. Finca El Cajón. Arbenz Papers.

[59] "Letter to Jacobo Arbenz from Instituto de Fomento de la Producción, Departamento de Crédito Agropecuario e Industrial," June 5, 1950. Finca El Cajón. Arbenz Papers.

The expansion of El Cajón and other coastal farms came at the expense of thousands of acres of forested land. A 1929 map of El Cajón and the adjoining farm of Tehuantepeque indicates that the plantations were dominated by woodlands and pastures with only small amounts of land planted with corn.[60] The Arbenz family modernized El Cajón to capitalize on new crops like cotton, citronella and lemongrass. Their drive to modernize irrevocably transformed the landscape. The Pacific Coast's transformation from lazy hinterland into modern, mechanized agrarian frontier occurred rapidly but the discourse around deforestation exposed a key tension in the modernization agenda. State officials attacked highland deforestation as proof of the peasantry's rejection of modernity, but clearing trees on the coast was celebrated as an act of colonization that opened up Guatemala's fertile frontier. In the eyes of the government, a tree felled in the highlands destroyed the fabric of the nation, a tree felled on the coast was the precursor to national development.

Nature's Fury

In October 1949, Guatemala was subjected to a month of intense rainstorms which caused destructive floods and landslides throughout the countryside. An estimated 30 inches of rain fell in the capital during the first fifteen days of October. The final deluge came in a rainstorm that raged for 72 hours, inundating communities around Lake Atitlán and Amatitlán. Surging rivers destroyed over 50 bridges, wrecked an estimated 1,200 miles of highways. The Guatemalan government reported that at least 50 villages had been swept away by water or buried under landslides triggered by the storm. Reports from affected regions suggested that the flooding and landslides had destroyed crops and homesteads throughout the Motagua Valley and in the Departments of Escuintla, Quetzaltenango, San Marcos, Santa Rosa, Jutiapa, Jalapa and Sacatepéquez.[61] "As each additional report arrives," President Juan José Arevalo explained to international media on October 19, "the disaster assumes greater proportions."[62]

The floods wrought significant damage across the South Coast, destroying communities and covering productive lands with mud and rock. At the port of San José, most of the town had been summarily swept into the ocean. The port of Ocós meanwhile disappeared under the mud,

[60] "Map of Tehuantepeque and El Cajón, 1929," Finca El Cajón. Arbenz Papers.
[61] "Guatemalan Flood Toll is 4,000; Damage is Placed at $40,000,000," *New York Times*, Oct 20, 1949, Proquest Historical Newspapers: The New York Times (1851-2009), pg 1.
[62] "Death Toll at 4000 in Guatemala Flood," *Washington Post*, Oct. 20, 1949. ProQuest Historical Newspapers: The Washington Post (1877-1997), pg. 18.

caught between the rapidly rising rivers and the lashing sea.[63] Flyovers by American pilots revealed that the very contours of Guatemala's coastline had changed, with "yellow mud deltas" forming at the mouth of rivers that fed into the sea.[64] The Madre Vieja river, fed by runoff from the Atitlán Volcano, buried 3 kilometers of the highway through the coastal town of Patulul under 5 meters of rock. Elsewhere the rushing water gouged a ravine 10 meters deep as it rushed toward the ocean.

In the days after the disaster, estimated death tolls fluctuated between official estimates of 4,000 to more conservative estimates by the Red Cross of 500. Upwards of 70,000 people were estimated to be homeless.[65] In the departmental capital of Escuintla, population 26,000, flooding left at least a 1000 children homeless and presumed orphaned. Campesinos were disproportionately affected by the storms, which obliterated their homes, their fields, and their livestock. Over 55,000 families were displaced and struggled to obtain food.[66] People in the Motagua Valley were reportedly eating two meals a day, trying to conserve food because the region was cut-off from the rest of the country.[67] On the Pacific Coast, people in Patulul urged the government to quickly send more food by rail because airdropped emergency rations had split open and spoiled.

As October came to a close, damages from the storm were estimated to be more than $23,000,000. The storm decimated agricultural production in some of Guatemala's most fertile regions. The United Fruit Company reportedly lost 1,500,000 pounds of rice and millions of banana stems. Meanwhile, coffee producers initially estimated that coffee crop destruction hovered around 30 percent although these estimates were subsequent lowered.[68] More than 20,000 labourers who lived or worked seasonally on large plantations were laid off in the wake of the disaster by landowners who cited a lack of work due to the destruction of roads and crops.[69] Tensions quickly escalated after workers were laid off and in Pochuta, Chimaltenango

[63] "Resumen de Estragos en San Marcos: Ocós Sufrió Mucho con la Inundación," *El Imparcial* October 22, 1949.
[64] "Desastre Sobrepuja al Ecuador," *El Imparcial* October 22, 1949.
[65] "Guatemala Flood Dead Put at 1000," *Washington Post*, Oct 19, 1949. Proquest Historical Newspapers: The Washington Post (1877-1997).
[66] "55, 000 familias sin rancho: Fincas en Ruina en la Costa Grande; Parcelas de Cafetal Estan Perdidas; Problema Humano Exige Pronto Atencion." *El Imparcial* October 22, 1949.
[67] "El Motagua Enfurecido se Desborda Sembrado el Estrago en las Vegas," *El Imparcial* October 22, 1949.
[68] "Death Toll at 4000 in Guatemala Flood," *Washington Post*, Oct. 20, 1949. ProQuest Historical Newspapers: The Washington Post (1877-1997), pg. 18.
[69] El Imparcial reported that the destruction of roads meant that coffee could not be shipped for processing and export. "Desastre Sobrepuja al del Ecuador" *El Imparcial*, October 22, 1949.

authorities threatened to send troublemakers to the Departmental capital to be punished. In the interim, local authorities distributed rations of corn and beans to defuse the situation.[70] To avert potential conflict and minimize suffering, the Guatemalan government tried to resettle displaced campesinos on national farms and private land. They also tried to control destabilizing food shortages and inflation that was caused by the destruction of crops on the verge of being harvested by repealing import duties on corn, beans, rice and eggs.[71] These measures had some success, but speculation continued and the state gave local authorities emergency powers to punish speculators and hoarders.[72]

Though large swathes of the Guatemalan countryside had been affected by the storms, two regions received special attention in early reports: the Motagua Valley and Panajachel. On October 14th, after 5 days of hurricane-like rain, the Motagua River burst its banks in the middle of the night and swept through towns and villages carrying away homes, people, and livestock. Valley residents estimated that the river rose 28 feet, and when the waters receded fertile fields were destroyed, and often buried by mud and debris. One elder remarked that he had never seen the like after 80 years living in the area.[73] Meanwhile, the small river that passed by the lake-side town of Panajachel became a rushing torrent that dragged huge boulders and ancient trees down from the mountains. The rushing water swept aside the houses of the humble and flooded luxury hotels. Locals attempted to cope with the devastation by remembering how the city had rebuilt after previous catastrophes. Elders cited an epic flood on the 4th of October 1881 that matched the ferocity of the recent disaster, though in the wake of that event most of the population left Panajachel for the South Coast. Braulio Mayén, a long-time resident, sought meaning in the disaster by suggesting it was punishment for human misuse of nature: "The same Nature repentant for the gift given to us, jealous, unleashed her implacable fury against human works, to highlight more her own charms."[74]

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[70] This relatively minor incident signified growing rural tensions and disagreement about the rights of laborers, which became national when the United Fruit Company attempted to do the same in the wake of a hurricane in 1951. See Forster, *The Time of Freedom*, 136. "55, 000 familias sin rancho: Fincas en Ruina en la Costa Grande; Parcelas de Cafetal Estan Perdidas; Problema Humano Exige Pronto Atencion," *El Imparcial*, October 22, 1949.
[71] "Tierras a los Campesinos Que se Quedaron Sin Ellas," Octobre 15, 1949.
[72] Guatemala Storm Loss Halved, *The New York Times* (1923-Current file), Oct 31, 1949, Proquest Historical Newspapers, p3. , "Guatemala Eases Food Imports", *New York Times* October 30, 1949, *Proquest Historical Newspapers*, 9.
[73] "El Motagua Enfurecido se Desborda Sembrado el Estrago en las Vegas," *El Imparcial*, October 20, 1949
[74] For the use of story to give meaning to disasters, see Julie Cruikshank, *Do Glaciers Listen?: Local Knowledge, Colonial Encounters, and Social Imagination*. (Vancouver: University of British Columbia Press, 2005);

El Imparcial largely dispensed with metaphysical explanations and placed the blame squarely on human actions. In an editorial titled "Neglect, Ignorance, and Ruin," they cited "incessant deforestation" and poor cultivation practices of highland farmers as the aggravating factor that allowed a destructive storm to become a catastrophe. Like others, *El Imparcial*'s writers sought to contextualize the storm by reminding readers of devastating storms in 1924, 1926 and 1931. They did so not to minimize its importance, but rather to emphasize that this storm was exponentially more destructive. Guatemala's best agrarian lands had been buried by landslides and scrubbed clean by floods. The damage was measurably worse, noted *El Imparcial*, where tree cover had been removed by deforestation. They reminded readers that though national defense was often thought of in terms of military arms alone, Guatemalans needed to initiate a new campaign to prevent the destruction of the nation's soils. This "national imperative" had to check the daily attacks on soils by Guatemalans who "only think about today and not tomorrow, in their immediate gain and in the least effort." The editorial strongly implied that traditional maize cultivation by indigenous campesinos caused highland deforestation. As an alternative, they promoted rational, disciplined cultivation practices that planned for a productive tomorrow. Failure to conserve soils now, risked a future where Guatemala became an "immense desert whose fruit will be dust storms, floods in the winter, desolation and poverty forever."[75]

In early November, representatives from the Ministry of Agriculture toured affected areas around the watershed of the river Los Esclavos in Santa Rosa. The oldest residents told officials that they had never seen a flood of this scale. The river had carried away half the town of Cerritos, and left local pastures buried under 2 to 4 meters of sand littered with tree trunks.[76] Campesinos lost cattle, pigs, chickens and even dogs during the flood. The report cited significant losses of corn, and other crops found in the region. Of these, sesame plantations were deemed the most affected. Ministry of Agriculture officials reported that over 80% of the crop was considered completely lost. High winds during the rainstorms had snapped the stalks of the tall plants and unrelenting humidity had resulted in outbreaks of fungus that contaminated the rest of the plants, causing record losses. The only beneficiaries, representatives reported

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"Panajachel Temblaba Bajo el Impacto de la Inundación: Piedras Enormes Arrastradas Como Nuez," *El Imparcial*. October 22, 1949

[75] "Incuria, Ignorancia y Ruina," *El Imparcial*, October 24, 1949.

[76] Report on Chiquimulilla to Ministry of Agriculure, November 10, 1949. Min Ag. Leg 421. AGCA. Guatemala. See also, "Situación de Habitantes en Zona de Chiquimulilla, Desoladora," *El Imparcial*, 25 October, 1949.

cynically, were local sawmill owners who were processing the cedar and other fine wood dragged downstream by the raging river.[77]

Agriculture officials, however, interpreted disaster as an opportunity to re-imagine the Santa Rosa region as an active participant in the Guatemalan economy. Representatives noted that sesame plants being grown at the nearby agricultural station in Guazacapán, Santa Rosa demonstrated resistance to the fungus sweeping through plantations. These sesame plants were being bred so that they could be distributed to farmers. Officials observed that they had seen other high yielding varietals of sesame and rice that promised to transform regional cultivation in the coming years. The Ministry-funded research station helped campesinos increase production; facilitating access to equipment to destroy plant diseases, distributing mango and citrus seedlings and selected seeds. With these special strains, campesinos were able to boost production over that achieved with traditional seed stock. Leveraging this disaster, government intervention capitalized on the scientific research undertaken at agricultural stations. Relief efforts distributed hybridized corn and sesame seeds in a bid to speed up their adoption and hasten the transformation of Santa Rosa into a new grain and export producing region.[78]

In the area around Cerritos, Santa Rosa, the Ministry of Agriculture discussed an ambitious plan for regenerating local agriculture by relocating the capital. Instead of dredging the nearly blocked river, they believed that Cerritos should be rebuilt further north so that the city could be rationally reorganized. The land would be parceled with the goal of turning Cerritos into a prosperous and modern city located near rich, but relatively untapped agricultural land. They endorsed a series of changes intended to bring the town into more rapid communication with the state and market. Building roads between Cerritos and Chiquimulilla, in conjunction with a state funded irrigation project, would open up the area to farming. These roads would also quicken the transport of fish between the coast and the capital and increase the scope of salt exploitation, already a key industry in Santa Rosa. The physical health of the region would be secured by a more intensive DDT campaign, even as the economic well-being of Cerritos was

[77] Report on Chiquimulilla to Ministry of Agriculure, November 10, 1949. Min Ag. Leg 421. AGCA. Guatemala.
[78] For literature about disasters and state-responses, see Theodore Steinberg, *Acts of God: The Unnatural History of Natural Disaster in America*. Oxford: Oxford University Press, 2000. For a Latin American perspective see Mark Carey, *In the Shadow of Melting Glaciers: Climate Change and Andean Society*, (New York: Oxford University Press, 2010); Report on Chiquimulilla to Ministry of Agriculure, November 10, 1949. Min Ag. Leg 421. AGCA. Guatemala.

being ensured by funds disbursed by INFOP.[79] The planners called on the organization to establish a credit union from which campesinos could take out small loans.[80] Officials promised, in short, that the combination of improved transportation, irrigation and credit would open up land and transform the region between Cerritos and Chiquimulilla into the "most prosperous granary of the South Coast."[81]

The storms destroyed many plantations and grain stores across the South Coast. INFOP responded quickly with a generous line of credit, which allowed the Arévalo administration to borrow Q200,000 to purchase food "[t]o stave off the scarcity of subsistence goods that threatened inhabitants."[82] INFOP also used the disaster as an opportunity to encourage farmers to use new, more productive corn varietals. Officials from the Ministry of Agriculture observed that during their visit, 30 quintales of a special yellow corn varietal, Tiquisate Dorado, had been given out to lowland campesinos just in time for a late sowing.[83] The disaster relief and mitigation effort dovetailed with INFOP's research on modern, more productive and nutrient dense maize varietals that were designed to combat endemically low corn yields.[84]

INFOP later reflected on their role in disaster relief, focusing on their successful distribution of modern, hybridized seeds to farmers in crisis. The institute spent roughly Q10,0000 on 335 quintales of Tiquisate Dorado corn and 302 quintales of Cocker Wilt cotton that they distributed to planters. After the disaster, INFOP continued to distribute hybridized

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[79] Concern about the outbreak of malaria and other diseases was high in the wake of the disaster because of standing water, destroyed drainage systems and high numbers of displaced peoples. The state approved a DDT campaign and the deployment of medical brigades to deal with injuries and identify disease risks. "Brigadas Anti-Epidémicas se Ponen en Acción," *El Imparcial*, October 24, 1949.

[80] The Minister of Defense, Jacobo Arbenz gave his official support for an increase in agrarian credits overseen by INFOP. "El Ministro de Hacienda," *El Imparcial*, Octubre 24, 1949.

[81] Report on Chiquimulilla to Ministry of Agriculure, November 10, 1949. Min Ag. Leg 421. AGCA. Guatemala.

[82] INFOP also helped the government import corn and beans from El Salvador. Once the loan was approved, INFOP coordinated the with the Ministry of Economy and the Comité Nacional de Emergencia to buy over Q140,000.00 of corn, beans, rice, flour, and salt from the United States and other countries. "El INFOP y el Fomento de la Producción Agrícola e Industrial de Alimentos Básicos," *Monitor del INFOP*, Vol. 2: No. 5 (1951), 10.

[83] This was possible because the warm climate on the South Coast allowed for two sowings of corn per year, as opposed to one in the colder and drier highlands. They also noted smaller quantities of watermelon and tobacco seeds had been distributed. Report on Chiquimulilla to Ministry of Agriculure, November 10, 1949. Min Ag. Leg 421. AGCA. Guatemala.

[84] The storms hampered the spread of seed stock, even between government research stations and farms. An official for the Ministry of Agriculture touring Santa Rosa highlighted the the plight of the Agricultural Station in the municipality of Guazacapán. Señor Zimmerman, head of the Mechanization branch at the station, had 4 caballerias of land ready to be seeded with 15 quintales of Tiquisate Dorado seed stock purchased by INFOP and the Comité Nacional de Emergencia. However, the seeds couldn't be transported from Guazacapán to the research station because the road had been "completely washed out by the storm, left like a riverbed with rock outcrops. Report on Chiquimulilla to Ministry of Agriculure, November 10, 1949. Min Ag. Leg 421. AGCA. Guatemala.

corn and cotton to farmers which they claimed produced higher quality crops. They even began expanding the range of imported hybrids, exploring possible wheat varieties and they imported potatoes from Holland for experimentation.[85] The rains of 1949 created an opportunity for INFOP to push its reform agenda onto skeptical farmers, with the hope that the high yields from hybrids would convince farmers to fully modernize their fields. INFOP emphasized the importance of modernization as the guarantor of well-being by distributing seeds and demonstrating the productive capacity of new agricultural frontiers, including the Pacific Coast, Quetzaltenango and the Motagua Valley. As the country struggled with the displacement and rural impoverishment caused by the disaster, INFOP redoubled its efforts to convince farmers that modernization would help them produce more and live better.

"Progressive Agriculture"

The disastrous rains of 1949 reinforced the government's commitment to soil and forest conservation in Guatemala's highlands. For modernizers, the disaster vividly demonstrated the continuing threat that campesinos posed to the country's productive regions and they called for a reorganization of Guatemalan agriculture. The research work that INFOP commissioned gave them the scientific legitimacy to argue for development schemes that balanced increased productivity in designated agrarian zones with soil and forest conservation in the highlands. The lightly populated Pacific Coast became a focal point for modernization and resettlement schemes. Experts argued that large landowners could intensify production on rich, coastal soils and there would still be ample land for small farmers from the highlands to clear and colonize. Arbenz and handful of progressive farmers had demonstrated that the Pacific Coast was ripe for modernization, with large tracts of forested land that could be quickly cleared and planted with new machines. The realization that mechanization could partially replace labourers encouraged reformers to dream of a new agrarian landscape, where large-scale industrial farms co-existed with smaller producers. INFOP built upon these efforts, using its experimental farms to demonstrate the productive potential of industrial agriculture and test new land tenure arrangements that emphasized the importance of conservation.

Modernizers received strong support for their efforts to reorganize Guatemalan agriculture from the International Bank of Reconstruction and Development (IBRD). The first

[85] "El INFOP y el Fomento de la Producción Agrícola e Industrial de Alimentos Básicos," *Monitor del INFOP*, Vol. 2: No. 5 (1951), 10.

IBRD mission to Guatemala toured the country in 1950, guided by experts from the INFOP. The IBRD report, released in 1951, warned the government that overpopulation was leading to widespread soil erosion and falling yields throughout the highlands. They advised the Arbenz administration to relocate campesinos to new villages in "regions better adapted to progressive agriculture" like the Pacific Coast. In these managed spaces, the state could quickly treat tropical diseases and manage the transformation of indigenous campesinos into industrious market farmers. These new, more prosperous, small farmers could produce for internal markets and support a burgeoning domestic industry through consumption.[86]

The government's long-term goal was to replace the large cattle ranches and poorly capitalized plantations that dominated the Pacific Coast with a more productive network of farms operating at multiple scales. Geographer Edward Higbee argued that many coastal plantations imported "thousands of emaciated cattle" from Southeastern Guatemala and Honduras and fattened them on "lush guinea-grass pastures."[87] This approach to cattle ranching was lucrative, but food production suffered because prime agricultural land was monopolized by ranchers who invested little and produced low grade meat, milk and leather. [88] The extractive mentality of coastal ranchers and landowners reflected the widespread belief that coastal soils were inexhaustible and could sustain high yields without maintenance. George Britnell, head of the

[86] Concentrating new migrants in planned communities was supposed to prevent "episodes of social maladjustment which have arisen in the past," an oblique reference to alcoholism, gambling and prostitution which was supposedly more common on the Pacific Coast. The IRBD drew on prevalent stereotypes that characterized the coastal population as less hard working and more prone to immoral acts, including drinking and prostitution. Guatemalan ideas of race were not static, tied to physiology alone, but rather race was a product of self-ascription, climate, perceived heritage and location. The Pacific Coast, with its long heritage of migration, was often a place of racial mixing and blended and shifting identities. These concerns about cultural deterioration echoed the sentiments El Cajón administrator Pablo Rohr who associated coastal living with indolence. Economic Survey Mission to Guatemala, *The Economic Development of Guatemala*, (Washington: International Bank for Reconstruction and Development, 1951), 26-27, 82-84; For a more nuanced analysis of coastal life see David Carey, "Empowered through Labor and Buttressing their Communities: Mayan Women and Coastal Migration, 1875-1965," *Hispanic American Historical Review*, Vol. 86 No. 3 (2006): 501-534; For discussions of race and mestizaje in Guatemala and Central America see Charles Hale, Darío Euraque, and Jeffrey L. Gould, *Memorias del Mestizaje*, (Guatemala: CIRMA, 2004).

[87] Edward C. Higbee, "The Agricultural Regions of Guatemala," *Geographical Review*, Vol. 37. No 2 (1947): 189. For geography of cattle, sheep, and pig production and flow of meat products see Felix McBryde, *Cultural and Historical Geography of Southwest Guatemala* (Washington: U.S. Government Printing office: Smithsonian Institute of Social Anthropology Publication No. 4, 1945), 37 and Map 13.

[88] Dirección General de Ganadería, "Plan de Fomento Pecuario: Importacion y Compra en el Pais, de sementales y lotes de hembras de pura raza, para el majoramiento de nuestro Ganado criollo, que se distribuye de la siguiente manera," n/d. Min Ag. Leg 421. AGCA. Guatemala.

IBRD mission, characterized coastal landowners as "absentee landlords…interested only in the total amount of immediate cash however ruinous the production methods used."[89]

Resettlement was only part of a larger effort to slow highland deforestation and improve food production. The IBRD encouraged the government to also invest heavily in more modern, industrial scale corn production on the coast. This would lower the price of corn and encourage highland farmers to experiment with new, more appropriate food and market crops. This advice dovetailed with efforts by the Ministry of Agriculture and INFOP to discourage corn cultivation. They promoted promote livestock and fruit trees as viable market crops, which would also contribute to highland reforestation and slow erosion.[90] The government recognized that the transition to new crops on the Pacific Coast and throughout the highlands might take several years, so in the interim they supported coffee production on the Pacific Slope. The revenues from coffee were supposed to nurture new crops like cotton, sesame, and lemongrass and fund resettlement initiatives on the coast.[91]

The IBRD's final report praised INFOP especially and encouraged the government to entrust all agrarian development initiatives to the organization. The notable synergy between IBRD recommendations and INFOP's mandate, was a by-product of the mission's close cooperation with the institute's technical advisers.[92] Like the IBRD, INFOP focused on the South Coast as an untapped agricultural frontier. They established several model farms on the Pacific Coast where they experimented with mechanization and new crops, including El Progreso, La Blanca, and Cuyuta. The most important of these was Cuyuta, located in the municipality of Masagua, Escuintla. Cuyuta was 46 metres above sea level—below the coffee belt and the ideal sugar production zone—and encompassed 6, 100 hectares of land. Cuyuta was INFOP's flagship initiative: a controlled location where they demonstrated the tangible

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[89] *The Economic Development of Guatemala*, 26.

[90] Antoliano B. Mazariegos of El Injerto in Huitán, Quetzaltenango thanked INFOP for credits that he used to buy fertilizers for his fruit farm. The photos included with his letter were supposed to demonstrate the productivity of his modern agriculture, but his overapplication of fertilizers increased yields to incredible levels, and the weight of fruit snapped the branches and split the truck. "Voces del Campo," *Monitor Del INFOP* Vol. 4 No 4. (1953): 6-7. See Rodolfo Lambour M., "Algunas Consideraciones para el Fomento de la Fruticultura en el Departamento de Jalapa," 4 August, 1951, Guatemala. Min Ag. 421. AGCA. Guatemala; *The Economic Development of Guatemala*, 27-28, 82.

[91] The IBRD believed that a short term dependency on coffee "need not in any way interfere with agricultural diversification; for, in view of the varied resources of the country, diversification is both possible and desirable to mitigate the effects of fluctuation of coffee prices." *The Economic Development of Guatemala*, 28.

[92] The IBRD praised INFOP especially and recommended that the organization lead all agrarian development initiatives. *The Economic Development of Guatemala*, vii, 29-30, 248.

production benefits of mechanization, selected seeds and new agricultural techniques to maximize productivity. INFOP used Cuyuta to evangelize the productive potential of Guatemala's Pacific Coast.

The *Monitor del INFOP* showcased the rapid expansion of agriculture with photospreads featuring tractors knocking down trees and brush: "conquering" land for cotton cultivation at another INFOP plantation, *La Blanca*. A series of photos documenting mechanization in Cuyuta emphasized the transformation of a disorderly forest into an orderly and clean cotton field (Figure 9). "The straightness of the furrows," read the caption of one photo, "is characteristic of an economic crop" (Figure 10).[93] The scale and speed of land change on the coast was almost without precedent in Guatemala. At Cuyuta, INFOP estimated that in 6 months, more than 962 manzanas had been cleared of forests and prepared for planting. By June of 1950, the farm had been seeded with 574 manzanas of corn and INFOP had planted 107 manzanas of a projected 350 manzanas of cotton.[94] Mechanization was integral to INFOP's development mandate, since it enabled increased production and opened up new land for cotton and corn.

Though INFOP encouraged farmers to clear coastal land, they criticized highland deforestation because it potentially caused landslides, floods and river desiccation that threatened coastal plantations. Though geographically distinct, these two regions were connected by rivers that brought important freshwater from the mountains to the coast. Cuyuta straddled Escuintla's major river, the Achiguate, which descended from the mountains and flowed through the Department to the Pacific Coast. Seasonal flooding by the river over millennial had deposited rich alluvial soils in the region, contributing to its fertility. Yet like rivers which flowed past Cerritos and Panajachel, the Achiguate also threatened downstream communities with disastrous floods. INFOP planners worried that overpopulation and correlated deforestation had increased the intensity and frequency of flooding in recent years. The *Monitor del INFOP* focused on strategies that farmers could use to maintain high yields and counteract the effects of upstream deforestation. They encouraged landowners to plant resilient African palm and coconut trees along riverbanks, both to slow erosion and prevent the inundation of fields with soil and debris.

[93] "Nuevas Tierras" *Monitor Del INFOP*, Vol 1: No. 1-2 (1950): 4.
[94] Figure 8 and 9 from "Mechanización Agrícola en la Hacienda 'Cuyuta,'" *Monitor Del INFOP*, Vol 1: No. 1-2 (1950): 14-15, 17.

INFOP also experimented with irrigation at Cuyuta, which was seen as a possible avenue to allow year-round cotton cultivation.[95]

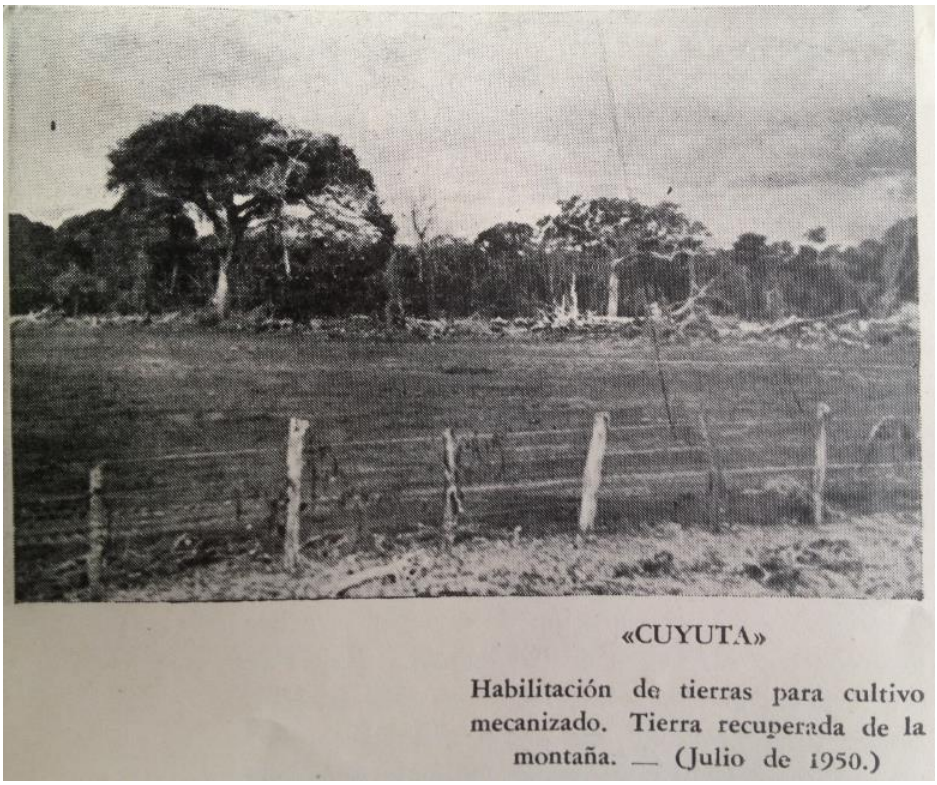

Figure 9: Clearing land for INFOP's Cuyuta plantation

[95] "La doctrina Conservanista de los recursos naturales en un Plan de Explotación de la Hacienda Cuyuta," *Monitor Del INFOP,* Vol 1: No. 1-2 (1950): 21; "El Cultivo del Algodón y el INFOP: Labor Realizada en los Años 1949 y 1950," Vol 2: No. 5, (1951): 18-19.

PLANTACION DE ALGODON EN «CUYUTA»
Variedad Delta Pine 15 a pocos días de haber sido sembrada. La rectitud de los surcos es propia de un cultivo económico.—(Junio de 1950.)

Figure 10: New cotton field, straight rows were evidence of an "economic crop"

INFOP also encouraged coastal colonization and they were vocal advocates of a mixed agrarian landscape comprised of large, medium and small farmers. They argued that varied land tenure encouraged crop diversity and increased the resiliency of the agrarian system. Large farms could focus on exports while smaller farms served domestic needs, although these lines could be blurred as cotton and corn were grown across multiple scales. INFOP agronomists cautioned farmers that soil fertility had to be closely managed on intensive operations, because exports like cotton could irrevocably deplete soil fertility without careful management. To minimize the loss of soil fertility and mitigate the risk of pests and pathogens, they encouraged landowners to practice crop rotations and add organic matter to the soil frequently.[96] This approach sacrificed immediate profits for the guarantee of long-term productivity.

The institute articulated a new "conservationist doctrine," which encouraged farmers to adopt modern techniques so that they could achieve and sustain higher yields without destroying the environment. INFOP claimed that farmers who focused on conservation produced "more and better food" for the "continuous well-being of Man, last usufructuary of natural resources." To

[96] "La doctrina Conservanista de los recursos naturales en un Plan de Explotación de la Hacienda Cuyuta," *Monitor Del INFOP*, Vol 1: No. 1-2 (1950): 19, 21.

demonstrate the viability of usufruct, INFOP rented a portion of Cuyuta to farmers, arguing that long-term land lease arrangements encouraged conservation. This argument formed the basis for a transformation in land tenure arrangements which reconceptualised the farmer as a steward of natural resources instead of an owner. Stewardship benefited the majority of Guatemalans over time, instead of a select few who benefited immediately and shared little of their wealth:

> The possession of the land must be interpreted [as] modifying the old concept of absolute owner and arbiter for the indiscriminate use of the same, to the new concept of possessing it as a guardian using it rationally according to its capacity to produce in order to leave it not impoverished and if possible with a more elevated index of fertility.

This vision of agriculture cast farmers in the role of guardians who could increase yields sustainably if they collaborated with scientists who would "not only increase the production of the earth but also maintain its fertility."[97] Campesinos who adopted this stewardship model surrendered a measure of control to technicians, who became the arbiters of crop schedules, soil management, and best practices regarding land use.

INFOP justified this loss of local autonomy by emphasizing the benefits that they could offer campesinos including higher yields and better access to domestic markets. In a lengthy memorandum written in 1951, Juan Fernández Mendía of INFOP's Cotton Division proposed a new plan to distribute cotton seeds to campesinos on Guatemala's Pacific Coast. He promised that this initiative would allow Guatemala's "huge, unproductive masses" to create "new communities of wealth" in a hitherto abandoned and unproductive region. Fernández Mendía estimated that upwards of 6, 000 manzanas could be put into production if roughly ten thousand indigenous campesinos planted 10 cuerdas each. This would create a large supply of inexpensive cotton for Guatemala's textile industry and would offer small farmers a new revenue stream that would improve their quality of life. [98] In 1951, the lead editorial for *Monitor del INFOP* reiterated the importance of campesinos to sustainable economic diversification of the countryside. "[We] must mark," they wrote, "the path of progress in the productive labour of the campesino from New Guatemala." To encourage more organized production of corn and especially cotton, they rented land from Cuyuta and other INFOP properties to campesinos in modestly-sized plots.[99]

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[97] Ibid.
[98] "Memorandum to Dr. Gabriel Orellana H., Gerente del Dept. de Fomento from Juan Fernández Mendía, Seccion de Algodón," p. 7. March 20 1951. Min Ag. Leg. 1940. AGCA. Guatemala.
[99] "Mision y Sentido Del INFOP," *Monitor Del INFOP*, 2: 7 (1951): 1.

For INFOP, cotton was more than a means for economic development and diversification, it was also an opportunity to transform indigenous campesinos into market-oriented farmers. Fernández Mendía argued that campesinos would adopt modernization once they saw its potential: "our Indians will derive slowly but positively the benefits of modern agriculture and voluntarily" trade their oxen and "antiquated" agricultural techniques for modern tools and tractors.[100] To ensure that campesinos did not neglect corn fields for commercial crops, Fernández Mendía suggested that they receive cotton seeds in direct proportion to the amount of corn they planted. INFOP sought to balance important increases in commercial crops with a steady output of basic grains. This plan also fostered the growth of small, diversified farms, and INFOP projected this sector would increase cotton production by 67%. Working together small and industrial-scale farms could potentially satisfy 50% of domestic demand by 1951, sharply reducing the textile industry's reliance on expensive imports.[101]

The rise of small producers was a source of anxiety for Guatemala's large landowners. They feared that new opportunities would create labour and food shortages that undermined the profitability of coffee and other exports.[102] Fernández Mendía defended INFOP's efforts to encourage cotton, noting that there would be no food shortages because the Maya were driven by instinct to produce corn. "[S]uppose," he wrote, "we subtract in their entirety the 10, 000 that can be dedicated to cotton, what is this to the millions [of campesinos] that are left?"[103] This attempt to assuage large landowners that their labour supply would be unaffected reinforced stereotypes about indigenous farmers that excluded them from participating as equals in agrarian modernization. The expectation that campesinos would rely on expert guidance and advice implied erroneously that they were passive recipients of modernization. As we saw earlier, campesinos eagerly engaged in modernization and it was often the state that struggled to respond effectively to their demands. This was especially true during the agrarian reform, when thousands of campesinos received land in usufruct on the coast and were encouraged to plant

[100] "Memorandum to Dr. Gabriel Orellana H., Gerente del Dept. de Fomento from Juan Fernández Mendía, Seccion de Algodón," March 20, 1951. Guatemala. Min Ag. Leg. 1940. AGCA.
[101] INFOP estimated total production would reach roughly 17, 760 qq. algodón en oro (cotton fiber) in the first year of this initiative alone. "Memorandum to Dr. Gabriel Orellana H., Gerente del Dept. de Fomento from Juan Fernández Mendía, Seccion de Algodón," March 20, 1951. Guatemala. Min Ag. Leg. 1940. AGCA.
[102] Arevalo and Arbenz administrations both depended on high coffee prices to fund diversification efforts. IBRD, 28. Glejesis, *Shattered Hope*, 158-159. Handy, *Gift of the Devil*, 129.
[103] "Memorandum to Dr. Gabriel Orellana H., Gerente del Dept. de Fomento from Juan Fernández Mendía, Seccion de Algodón," March 20, 1951. Guatemala. Min Ag. Leg. 1940. AGCA.

commodities like cotton but state agencies, including INFOP, failed to distribute loans, seeds, and fertilizers in the quantities needed by small farmers.

INFOP encouraged campesinos to adopt measures that prioritized long-term sustainability over raw productivity. Though cotton can produce high yields on virgin soils, maintaining productivity requires farmers to carefully manage soil fertility and pests.[104] Agronomist Narcisco Castillo wrote an in-depth analysis of best practices for cotton farmers in 1951, based on extensive work undertaken on the plantation Chapán in Champerico, a municipality in the Department of Retalhuleu. Castillo criticized farmers in Retalhuleu—and by extension the rest of the country—for ignoring the importance of soils. After two or three years of relentlessly cropping, eager cotton farmers exhausted key soil nutrients and rendered once fertile soil incapable of producing good harvests. Castillo encouraged farmers to replenish nutrients by using cattle manure and fallowing land. He was adamant that cotton should not be grown in the same location year-after-year and advised rotating cotton with corn and legumes on a four year rotation. Farmer's using this method would still harvest cotton annually, but in smaller amounts than producers who dedicated all their land to cotton. By carefully maintaining soil fertility and practicing rotations, campesinos could sharply decrease their need for fertilizers and lower their overall production costs.[105]

Though campesinos could reduce their use of fertilizers through careful crop rotations, pesticides remained an absolute necessity for cotton farmers. Rotations helped slow the spread of pathogens, but Castillo also advised farmers to burn cotton plants after the harvest so that possible pests or plant diseases would be destroyed before the next harvest.[106] INFOP also facilitated the distribution of pesticides to cotton farmers across the Pacific Coast. In 1950 alone, INFOP imported 700 quintales of cotton seeds and over 20,000 Quetzales worth of pesticides, including lethal organophosphates Toxaphene and Gamexan.[107] A 1951 proposal to give cotton

[104] For discussion of cotton cultivation see F.S. Parsons and Angelo de Tuddo, *Informe Sobre los Aspectos Agrícolas, Técnicos y Ecónomicos de la Producción de Algodón en Centroamérica* (Rome: FAO, March, 1959); F.S. Parsons, *Los Problemas de la Producción del Algodón en América Central* (Rome: FAO, 1964).
[105] "El Cultivo del Algodón y El INFOP: Labor realizada en los años 1949 y 1950" *Monitor Del INFOP*, 2 No 5 (1951): 18.
[106] "El Cultivo del Algodón y El INFOP: Labor realizada en los años 1949 y 1950" *Monitor Del INFOP*, 2 No 5 (1951): 18. This was also mandated under Article 17 of a 1952 law regulating cotton production. Draft Decree: Algodón, n.d. Min. Ag. 421. AGCA.
[107] "El Cultivo del Algodón y El INFOP: Labor realizada en los años 1949 y 1950" *Monitor Del INFOP*, 2 No 5 (1951), 18. Now banned in the US as a carcinogen, 34 million pounds of toxaphene were used in the country between 1966-1976. Nearly 85% was applied to cotton. "Toxaphene," *NTP (National Toxicology Program) Report*

seeds to campesinos—expanding earlier seed distribution efforts—tried to reduce costs by using INFOP produced seeds but they still stipulated that cotton growers had to apply at least 120 lbs of insecticide per manzana to secure a good cotton harvest.[108] This reliance on pesticides was subsequently legislated in a 1953 law that required cotton growers to use only certified, disinfected seeds and forced them to obtain pesticides before planting.[109]

Cotton thrived on the Pacific Coast but the humid climate also favored the growth of pests and plant diseases that could destroy cotton plants. Indeed, a 1952 report from the Department of Mechanization concluded that the Pacific Coast was "almost inadequate" for cotton production because of high precipitation and less than ideal soils. The report argued that the Motagua Valley was one of the most important regions for the future of cotton production in Guatemala because it was easily mechanized with ideal soils. They encouraged the state to build an experimental farm to promote cotton production it would help fight against the "apathy characteristic" of this region.[110] The Pacific Coast was not a natural home for cotton production, but INFOP heavily promoted its cultivation because it grew well under controlled conditions and there was an abundance of undeveloped land that campesinos could potentially use. Unlike the Motagua Valley, this land would produce immediately but the long-term prospects for agricultural production on the Pacific Coast were less unclear.

The Pacific Coast presented visitors with a vision of unending abundance, but experts like Castillo warned that fertility had to be carefully managed to prevent soil exhaustion, erosion, and pests. With expert consultation, modern agricultural methods could help cotton growers and other exporters avoid crop diseases and prevent falling yields. The only requirement to ensure success—barring catastrophic rainfall or market collapse—was adopting conservation measures that respected the limitations of coastal agriculture. Failing to take protective measures would, Castillo cautioned, guarantee the rapid collapse of a potentially lucrative industry after just a few years of good harvests.[111] By transforming cropping practices and shaking-up land tenure,

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on Carcinogens, 14th ed. (Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service). Accessed 24 March 2017. https://ntp.niehs.nih.gov/ntp/roc/content/profiles/toxaphene.pdf

[108] "Memorandum to Dr. Gabriel Orellana H., Gerente del Dept. de Fomento from Juan Fernández Mendía, Seccion de Algodón," March 20 1951. Guatemala. Min Ag. Leg. 1940. Guatemala. AGCA.

[109] Article 6 and 16 especially of the Draft Decree: Algodón, n.d. Min. Ag. 421. AGCA.

[110] "Plan de Operaciones para el Departamento de mecanizacion Agricola, durante el año fiscal de 1951-1952" n/d Min. Ag. 421. AGCA.

[111] Narciso Castillo G., "Recomendaciones: A Cosecheros de Algodón que Dispongan de Potreros Aledaños a Sus Sembrios," *Monitor Del INFOP*, Vol 2: No. 5 (1951): 15.

INFOP hoped to minimize disease risk and maximize production cotton production on the Pacific Coast but this system was heavily dependent on pesticides to control disease. As cotton production increased during the 1950s and 1960s, cotton growers abandoned crop rotations and they sustained high yields by clearing new land and using fertilizers and pesticides to keep older land productive.[112]

INFOP's ambitious rural development project involved thousands of campesinos and widespread technical interventions to rural productivity. Cotton was the focus of their development efforts, but they also took interest in other non-traditional crops including sesame and burgeoning industries like salt production. INFOP's agronomists frequently struggled to resolve the human benefits of development—improvements in rural wellbeing—with the environmental costs of development which often led to deforestation and habitat destruction. This was evident in the discussion around salt production, which flourished in the biodiverse region bordering the Pacific Ocean. Between Guatemala's Pacific plain and the ocean there is a rich ecosystem dominated by swamps, lagoons and mangroves. This area supports a wide variety of migratory birds and is a vital breeding ground for sea turtles and fish. [113]

For centuries, salt producers in Santa Rosa, Escuintla, Suchitepéquez, and Retalhuleu used natural and manmade lagoons to trap water which evaporated under the hot sun and coastal wind. Salt brine was also collected and cooked to create pure salt, a process that consumed large quantities of lumber. [114] Like corn, cotton and cattle by-products, salt was part of the basic diet

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[112] In 1963, Joseph Stevenson's report on cotton production in Guatemala observed that the "[u]se of commercial fertilizers is not widespread. On new lands recently cleared of jungle growth, fertilizers are not applied." Stevenson warned that this was a temporary situation and future planters would need to consider fertilizer, crop rotation and soil conservation to maintain "current high yields." Joseph Stevenson, *Cotton Production in Central America* (Washington, D.C.: USDA Foreign Agricultural Service, 1964), 27.
For a discussion of cotton and pesticides in Central America see Daniel Faber, *Environment Under Fire: Imperialism and the Ecological Crisis in Central America*, (New York: Monthly Review Press, 1993); Robert G. Williams, *Export Agriculture and the Crisis in Central America* (Chapel Hill: University of North Caroline Press, 1986), 37.

[113] Consejo Nacional de Áreas Protegidas, *Guatemala y su Biodiversidad: Un Enfoque Histórico, Cultural, Biológico y Económico*. (Oficina Técnica de Biodiversidad, 2008). For earlier descriptions Felix McBryde, *Cultural and Historical Geography of Southwest Guatemala*, 58-60. For 19th century account see also Pedro Cortés Larraz, *Decripción Geográfico-Moral de la Diocesis de Goathemala* (Guatemala: Sociedad de Geografía e Historia de Guatemala, 1958) and for colonial account see Francisco Antonio de Fuentes y Guzmán, J. Antonio Villacorta C, Ramón A Salazar and Sinforoso Aguilar, *Recordación Florida: Discurso Historical y Demonstración natural, material, militar del reyno de Guatemala*, (Guatemala, S.A.: Tipografía Naciona, 1932-33). A masterful deconstruction of this text's discussion of landscape and Indigenous labor is found in Severo Martínez Peláez, *La Patria del Criollo: An Interpretation of Colonial Guatemala* (Durham: Duke University Press, 2009).

[114] Eduardo Williams Martínez, *La Sal de la Tierra: Etnoarquelogía de la Producción Salinaera en el Occidente de México* (Zamora, Michoacán: El Colegio de Michoacán: Secretaría de Cultura del Estado de Jalisco, 2003).

and the state wanted to improve domestic production so that it could reduce imports. In 1951, an INFOP survey of the salt industry determined that domestic production had peaked in 1946 and declined year after year, despite increasing domestic demand. Imports were used to satisfy demand but INFOP was concerned that importers were manipulating the market. Import records indicated that Guatemala imported far more salt than it needed to meet domestic demand and by 1950, importers had stockpiled over 90, 000 quintales of salt. Although salt should have been readily available, the cost per unit remained very high and INFOP was concerned that importers were artificially inflating prices and limiting accessibility.

Officials struggled to determine the correct course of action: should the state encourage production to meet domestic demand or curtail production to conserve local forests? The INFOP report cited Franklin D. Roosevelt's injunction that a better distribution of wealth was the only way to solve problems between capital and labour. Yet INFOP officials worried about allowing more small salt producers, cautioning that the unfettered growth of the salt industry would lead to the "exhaustive and disorganized" exploitation of coastal forests for firewood. Salt producers around Champerico, Itzapa and San José had already exhausted local lumber supplies and were forced to travel far afield for wood which increased their costs considerably. Instead of popularizing production to meet demand, INFOP limited existing small producers to roughly 1,000 quintales of salt per "harvest." Officials believed that if these small producers were also encouraged to work small scale farms they would experience a "one hundred percent improvement in their standard of life." Moreover, by creating a robust network of small salt producers who used forest resources sustainably, the industry would be able to produce salt reliably and at a reasonable cost.[115] Unlike the highlands, there was no discussion of forced relocation or any concerted attempt to reorganize production systems to minimize their impact on local ecosystems. In this case, conservation was invoked to maintain a socio-economic order that dovetailed with government policy but had questionable implications for delicate coastal ecosystems vital for migratory birds and aquatic life.

The example of salt production demonstrates the political and geographical limits of the conservation discourse in Guatemala. Agronomists and policymakers believed that if farmers followed a conservation ethos, the nation would derive long-term economic benefits and

[115] "Estudio de la Producción de Sal en el País y Factores que Influyen en el Abastecimiento del Mercado Interno," *Monitor Del INFOP*, Vol 3: No. 8 (1952): 26.

immediate improvements in food security. However, this conservationist discourse made clear political and social judgements about what constituted sustainable land use. For example, cattle ranching which had historically dominated the Pacific Coast was heavily discouraged by modernizers. They argued that it was environmentally destructive—requiring large amounts of land to produce little meat—but it also was the power base of the traditional landed elite. On the other hand, salt production that clearly caused coastal deforestation was allowed to continue with only light regulation to restrain cutting because it employed campesinos and helped redistribute income. The Arbenz administration believed that the Pacific Coast was a frontier awaiting development: an ideal location to foster crop diversity and democratize land tenure. Conservation was an important idea that informed government discussion about the best types of land use, but it was often utilized as a political tool to discredit large landowners and encourage a dependency on experts.

INFOP was most effective when it had financial and technical leverage over the landowners and campesinos who worked with the organization. In these cases, it could encourage compliance with its conservation ethos and the technical advice offered by its experts. Although INFOP was widely recognized as an effective organization, as political tensions mounted its close association with the Revolution proved to be a significant liability and hindered the institute's efforts to promote sustainable land use. In 1953, the Ministry of Agriculture received several reports that over 150 manzanas around INFOP's Cuyuta plantation had been left unattended by farmers after the cotton harvest. Cotton farmers were required by a 1952 law to burn and bury cotton plants after harvest so that pests and diseases would not spread.[116] The most notorious offender was Colonel Elfego Monzón, who rented nearly 170 mananzas in Cuyuta from INFOP.[117] Colonel Elfego Monzón was an important political figure during the Revolution who rose to prominence because of his military connections and his political opportunism. To quell political conflict between conservatives and progressives, Arévalo reached out to Monzón on the anniversary of Major Francisco Arana's death in 1950. Monzón negotiated to become the Minister of the Interior, but he was forced to resign months after his appointment, because of congressional opposition to his closure of the radical

[116] Article 17, Draft Decree: Algodón, n.d. Min. Ag. 421. AGCA.
[117] Monzón was no stranger to controversy. In 1950, he closed the radical newspaper *Octubre* and the Marxist school Jacobo Sanchéz. He was forced to resign from his position after opponents protested in Congress, although *Octubre* did not reopen until after the election. Handy, *Revolution in the Countryside*, 35.

newspaper *Octubre* and the Marxist school Jacobo Sanchéz. Monzón returned to power in a minor way under Arbenz as Minister without a Portfolio, though he left this position and eventually joined other disaffected but ambitious officers in covert efforts to overthrow Arbenz with US backing. [118]

INFOP urged the Ministry of Agriculture to intervene because they could not compel Monzón to comply with the destruction order.[119] The Ministry of Agriculture sent an inspector from the Division of Plant Health who found that Elfego Monzón lived in Guatemala City and had not visited his land recently. According to locals, Monzón had lost interest in the property because he anticipated that the land would be redistributed to campesinos as part of the agrarian reform.[120] Once Monzón had been found delinquent, the state assumed responsibility for the property, but the destruction was not carried out until June of 1953 due to a shortage of tractors.[121] Although the Ministry quickly remedied the situation, this example indicates the practical limitations of INFOP's efforts to promote sustainable land use.[122]

The vilification of INFOP after the 1954 coup was also a by-product of this conflict between Monzón and other conservatives who resisted the institute's efforts to transform the countryside and empower campesinos. After the 1954 coup, Monzón was part of the *junta* of officers that served until a new President was installed. He was forced to leave Guatemala, however, when he tried to stand up to Castillo Armas, the dominant member of the junta and the American choice for President.[123] As a cotton grower, Monzón's singular focus on profits and disinterest in soil and pest management foreshadowed the agrarian landscape after the coup. Cotton cultivation after 1954 was driven by speculation encouraged by easy and plentiful

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[118] Tomas Sierra Roldan, *Dialogos Con el Coronel Monzón*: *Historia Viva de la Revolución Guatemalteca, 1944-1954*, (Guatemala, 1958), 32-33; Schneider, *Communism in Guatemala*, 32; Handy, *Revolution,* 181-182.
[119] "Letter to Minister of Agriculture from Rodolfo Lambour M., Head of the DAN's Office for Programs for Agricultural Production," April 22 1953; "Letter to Minister of Agriculture from Carlos Leonidas Acevedo, Gerente General, INFOP," April 27 1953. Min. Ag. Leg. 1940. AGCA. Guatemala.
[120] The inspector visited several other wayward farmers in the area. The largest farm owner had cleaned up his fields after receiving the official warning. Carlos Aguirre, another renter, cited a lack of machinery which the inspector dismissed as an excuse. The incident demonstrated the cooperation and information sharing between Guatemala's major players in agricultural development. "Letter to Division Sanidad Vegetal from Roberto Morán Orellana, Agente Sanidad Vegetal," April 10 [sic], 1953. Guatemala. Min Ag. Leg. 1940. AGCA.
[121] "Letter to Minister of Agriculture from Carlos Leonidas Acevedo, Gerente General de INFOP," June 1, 1953. Guatemala. Min. Ag. Leg. 1940. AGCA. Guatemala.
[122] "Memorandum" n/d; "Letter to Secretary General of INFOP from J. Morales B., Subsecretary for Agriculture," April 23 1953. Guatemala. Min Ag. Leg. 1940. AGCA. Guatemala.
[123] Gleijesis, *Shattered* Hopes, 352-353; Handy, *Revolution in the Countryside*, 35; Schneider, *Communism in Guatemala*, 72-73; Tomas Sierra Roldan, *Dialogos Con el Coronel Monzón*: *Historia Viva de la Revolución Guatemalteca, 1944-1954*, (Guatemala, 1958), 32-33.

government loans. The financial assistance for cotton cultivation was a legacy of the revolutionary period, but it was divorced from the technical assistance and lacked the emphasis on conservation that characterized early cotton promotion efforts. INFOP was divested of its technical responsibilities after 1954, and it became another avenue for landowners to access cheap capital. The modern perception that cotton was an inherently destructive crop has to be qualified by examining the political and environmental context in which it was cultivated. During the Revolution, the government believed cotton cultivation would help campesinos make the ideological transition from campesino to farmer and the geographic migration from highlands to the coast.

Conclusion

INFOP's mandate, "Produce more to live better," focused on modernization as a means of rural development that could rapidly improve rural wellbeing. The institute worked to diversify the Guatemalan economy by promoting new exports like cotton among large landowners. Established elites remained focused on coffee production, but a few enterprising landowners experimented with new crops and cultivation techniques. INFOP and the Ministry of Agriculture also advocated multiple scales of production as the means to achieve the economic and ecological resiliency that eluded coffee dependent Guatemala. This modernization agenda did not seek to efface export agriculture but rather balance it with domestic production so that Guatemala could move toward self-sufficiency and greater equality. Although they believed fervently in the power of rural modernization, INFOP's officials struggled to convince farmers to abandon coffee and corn for new modern crops.

The disastrous rains of 1949 offered INFOP a unique opportunity to overcome rural resistance by freely distributing new high-yielding corn and cotton seeds to large landowners and campesino who had lost their crops. They calculated that farmers would naturally adopt new seed varieties once they realized their productive potential, although these crops often carried hidden costs. To obtain the best yields, farmers had to follow expert advice and expend often scarce capital on fertilizers and pesticides needed to sustain high yields. This watershed moment also encouraged widespread government action on the pressing problem of highland deforestation, which contributed the soil erosion and possibly aggravated landslides and flooding on the Pacific Coast. New agricultural frontiers like Santa Rosa and, more generally, the Pacific

Coast became the focus of rural development efforts and INFOP envisaged a new, diversified landscape of large and small farmers.

The colonization of the Pacific Coast was part of a larger effort to diversify production, reduce population pressure on highland resources, and transform campesinos into market farmers. INFOP used this moment of demographic and agricultural change to experiment with alternative land tenure arrangements that emphasized the concept of people as stewards of natural resources. The institute successfully established cotton as a new and compelling crop for large and small farmers. Though cotton offered potentially large returns for individual farmers, INFOP counselled moderation and encouraged farmers to implement crop rotations and fallow periods which would ensure the long-term viability of their fields. The usufruct relationship was supposed to break old notions of individual ownership, and encourage conservation by emphasizing the common resources Guatemalans shared. INFOP's role in this arrangement was as a guarantor of environmental protections, which elevated the institute's expertise over local authority and knowledge.

Industrial cotton varieties could produce huge crops with careful management and technical oversight. Their susceptibility to disease made them, counterintuitively, ideal crops for the expansion of the state into new agricultural frontiers. Landowners and campesinos had to work with agronomists and policymakers to coordinate loans and technical assistance. This expanded the reach of government authority but also undermined local autonomy by creating a farming system whose productivity depended on external inputs that farmers had to obtain through the state. Campesinos depended on the goodwill of technicians to access credits and farm equipment and this limited their ability to openly criticize the state. Middle and upper class farmers had more leeway to choose their crops and ignore conservation regulations that were designed to improve productivity for all farmers. The case of Colonel Monzón proved that elites could ignore INFOP's technical advice without fear of serious sanctions. The organization's mandate to transform rural development through modernization was an aspirational goal, which functioned only when farmers agreed to work under the direction of technicians.

El Cajón and Cuyuta were powerful symbols of the transformative power of agrarian modernization, which many experts and government officials thought could boost productivity by reorganizing labour and land tenure arrangements. These farms were also at the forefront of a radical re-imagining of coastal agriculture that tried to extend the agrarian frontier by clearing

new land and planting multiple crops in the same year. Examined more closely, each demonstrates how efforts to rapidly transform rural Guatemala were inhibited by social and environmental constraints. Efforts to transform land and labour use at El Cajón, Jacobo Arbenz's farm, showed that there was often a disjuncture between the aspirations of modernizers and the rural reality: machines broke down more quickly than anticipated, new crops failed unexpectedly, and campesinos sometimes refused to surrender customary rights to land and food in exchange for fair wages. Rural life was messy and complicated in a way that sometimes defied expert planning.

Similarly, INFOP's efforts to promote a diversified and sustainable landscape at Cuyuta ignored the environmental problems that plagued cotton production on the Pacific Coast. Agronomists tried to mitigate these risks by urging campesinos to follow expert advice including adopting crop rotations and using new seeds and pesticides distributed by the state. These were temporary solutions that only slowed the environmental problems associated with cotton, and they only worked as long as the Guatemalan government was willing to regulate landowners. Even if INFOP had successfully diversified landownership on the Pacific Coast, the model of cotton production they promoted could only sustain high productivity by using chemicals that threatened the health of ecosystems and labourers. Moreover, the example of Coronel Monzón highlights how uncooperative farm operators could undermine conservation measures that were supposed to limit the risk of destructive pests and pathogens for cotton growers across the Pacific Coast.

Chapter 5: The Coastal Laboratory

The apex of the Revolution was the 1952 agrarian reform that distributed thousands of acres of land to campesinos. President Jacobo Arbenz called the reform that he helped implement, "the most precious fruit of the revolution."[1] The ambitious effort to transform Guatemalan agriculture successfully redistributed 17% of the country's farmland and benefitted over 100,000 families. The state helped beneficiaries develop their new land, offering them technical advice, new seeds and capital. The agrarian reform was cut short in 1954 by a US-backed coup that was supported by the military and large landowners. Since Guatemala's agrarian reform lasted just two years and most of the expropriated land was returned to large landowners, scholars have treated it as an isolated political event that created impressive but short-lived improvements in the lives of campesinos.[2] This chapter argues that the agrarian reform was a transformative moment in Guatemalan politics and agriculture that encouraged cooperation between bureaucrats, technicians and campesinos. Working together, these parties helped solve Guatemala's chronic food production problem and began to diversify crop production.

At the end of President Arévalo's term, large landowners remained powerful and export agriculture was largely regulated by the good intentions of individual landowners. Guatemala's economic growth continued to depend on export crops like coffee, sugar and bananas. The Ministry of Agriculture and INFOP had successfully introduced new techniques and avenues to obtain credit, but without substantive land reforms campesinos did not have enough land to participate in the agrarian modernization project. Although campesinos were interested in crop diversification, most focused on cultivating milpa because it produced food reliably without external inputs. Since most campesinos did not have sufficient land to fully support themselves, they travelled to the Pacific Coast to work on coffee, sugar, and banana plantations. The precariousness of this arrangement was exposed after the floods of 1949 destroyed plantations where campesinos laboured and their subsistence farms. After the disaster, food prices began spiraling out of control and the Arévalo government struggled unsuccessfully to control inflation and prevent scarcity that threatened Guatemala's poorest residents.

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[1] Jim Handy, "The Most Precious Fruit of the Revolution': The Guatemalan Agrarian Reform," *The Hispanic American Historical Review*, 68, No. 4 (Nov., 1988): 675.
[2] Timothy J. Smith and Abigail E. Adams. *After the Coup An Ethnographic Reframing of Guatemala, 1954* (Urbana: University of Illinois Press, 2011), 3.

In 1952, the Agrarian Reform Law, also known as Decree 900, was passed in an effort to stabilize food prices, diversify agricultural production and democratize land tenure. Beneficiaries of Decree 900 had a short window to work the land before the Arbenz government was overthrown—two years or less—but they rapidly cleared land and planted their allotments with corn and other modern crops including rice and cotton. The state offered robust technical and financial support to encourage campesinos to plant a balance of crops for domestic consumption and exports. By removing the obstacles that hampered previous development efforts—land and capital—the state facilitated a dizzying transformation of expropriated land. This was most noticeable on the Pacific Coast, where campesinos turned forests into fields and transformed overgrazed pastureland into gardens. By 1953, Guatemalan agriculture was thriving and there was an 11.8% increase in corn production compared to 1950. Coffee producers collected record harvests and Guatemala reversed its corn deficit and began exporting surplus corn to neighboring countries.[3] Though it was controversial and imperfect, Decree 900 demonstrated that an active government could create the material and financial conditions necessary for peasants to improve their lives and escape generations of exploitation. Few campesinos were able reap the fruit of their labours as the coup gave landowners the power to drive them from expropriated lands under the guise of eliminating communists.

Reflecting on the agrarian reform, María Vilanova de Arbenz emphasized its importance as a "type of experimental laboratory, of crops and technical innovations that gave a great push to the modernization of agriculture." [4] Her evaluation of the agrarian reform highlights both the popularity of agrarian modernization initiatives introduced during the Revolution and their unexpected durability. The agrarian reform—and the modernization efforts that preceded it—transformed Guatemala for generations. The socio-ecological changes caused by this experiment were especially evident on the Pacific Coast, where large landowners rapidly cleared land and planted it with cotton to prevent expropriation. Throughout the agrarian reform, landowners denigrated small farmers as wasteful and emphasized the productivity of large, industrial scale farms as the key to Guatemala's economic prosperity.[5]

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[3] Handy, *Revolution in the Countryside*, 95. Handy, *Gift of the Devil*, 129.

[4] Though she evidently had some personal bias, Vilanova was well qualified to comment on agrarian issues: her family in El Salvador were successful cotton growers and she carefully managed El Cajón. María Vilanova de Arbenz, "El Soldado del Pueblo," p. 97. Serie Borradores de Libros. Arbenz Papers. For more on Vilanova see Piero Gleijeses, *Shattered Hope*, 134-136.

[5] For this counter narrative and the role it played in agrarian development after 1954 see Chapter 5.

Large landowners benefited tremendously from the agrarian reform and its rapid reversal. To avoid expropriation, they rapidly cleared and planted their land with new crops including cotton. After the coup, they reclaimed large swathes of land cleared and planted by campesinos and inherited robust new structures of agrarian development staffed by well trained technicians. Records from the Ministry of Agriculture and the National Agrarian Department that oversaw Decree 900, indicate that conservative Guatemalan elites retook their land after the coup by focusing on the supposedly wastefulness of campesinos. The success of this discursive strategy relied on the entrenched perception that indigenous campesinos were unable to innovate or engage with modernization efforts. The coup not only ended the agrarian reform, but it also concluded a transformative moment when the state and indigenous communities worked toward a common goal.

Hunger

The assassination of Francisco Arana in the summer of 1949 and the devastating flooding that occurred a few months later threatened to destabilize Guatemala and bring a premature conclusion to the Revolution. During President Arévalo's term in office, the government was decidedly moderate and the state was hesitant to engage in systemic reforms. The conservative army officer Arana nominally supported Arévalo and kept him in office, but in return he forced the President to limit campesino and labour activism. When Arana's death was announced, a large revolt broke out among his supporters in the army, but Jacobo Arbenz helped Arévalo repel the revolt by distributing arms to workers and political allies. Arbenz's actions during this moment of crisis established his reputation as a leading Revolutionary and helped him win the Presidency in November, 1950. The death of Arana and the subsequent purging of nearly one quarter of army officers created an opening for more serious reform efforts.[6] Though the Revolution had not lived up to its emancipatory rhetoric, there were still many ardent supporters in the countryside. Surveying the conflict between conservatives and supporters of the Revolution in San Marcos during this period. Cindy Forster argues that campesinos "took personal responsibility for protecting the revolutionary state as their own."[7]

Through the Arévalo administration, the government's inability to control food costs was a major source of discontent and anxiety in the country. The 1949 disaster destroyed fields as

[6] Handy, *Revolution in the Countryside,* 182-183.
[7] Forster, *The Time of Freedom,* 168.

they were about to be harvested, causing food scarcity and speculation in a system that was already unstable. These problems were especially acute in Guatemala City, and urban activists urged the government to implement reforms that would curb rural poverty, stabilize food prices, and stem indigenous migration to the Capital.[8] In May of 1951, the Guatemalan government reported that the price of food in the capital was 21.5% higher than the year before. To mitigate public concern, President Jacobo Arbenz took to the radio on May 1st to announce that he had submitted a study on Guatemala's food problem to the National Economic Council. Two days later, the President told the press that food shortages and inflation would continue to plague rural Guatemala without sweeping reforms. Arbenz blamed the food crisis on antiquated farming practices employed by the rural elite and highland campesinos. He argued that shortages were the outward manifestations of a dysfunctional economic system that wasted Guatemala's natural wealth. The President argued for social and economic reforms that encouraged farmers to modernize, diversify, and engage with the market.[9]

During the election, Arbenz pledged to pass a sweeping agrarian reform that would "liquidate latifundia and make fundamental changes in primitive methods of work…to effect a better distribution of uncultivated land or that land in which feudal customs continue."[10] After he was elected, Arbenz did something that Arévalo had been unwilling to do: he confronted the large landowners who controlled most of the country's best land. Arbenz justified an agrarian reform as a tool that could induce landowners to modernize and "treat agricultural farms as capitalist enterprises in both production methods and worker relationships." [11] His commitment to fostering capitalism inspired support from even upper class members of his government like the Minister of Agriculture, Nicolás Brol, and the Minister of Economy, Roberto Franjul.[12] As we will see, Brol's commitment to providing campesinos with access to the resources they needed to prosper was evident in the numerous letters he answered from Decree 900

[8] Inflation and food scarcity disproportionately affected the city's indigenous population, many of whom came to Guatemala City after 1944 seeking opportunities denied to them under the Ubico dictatorship. They settled in unplanned communities that straddled the city's ravines, many of which were devastated by the rains of 1949. After the floods, many people were forced to settle in new colonias on the edges of the city which were chronically underserviced. John T. Way, *The Mayan in the Mall: Globalization, Development, and the Making of Modern Guatemala* (Durham and London: Duke University Press, 2012), 44-46, 56-58.
[9] "Síntesis Económica – Financiera de 1951 en Guatemala," *Monitor del INFOP*, Vol 2: No. 7 (1951): 28. For similar sentiments expressed in April 1951, see Gleijeses, *Shattered Hope*, 150.
[10] Handy, *Revolution in the Countryside*, 85.
[11] Handy, *Gift of the Devil*, 127-128.
[12] Gleijesis, *Shattered Hope*, 209-210.

beneficiaries. The goal of liberating the countryside from a feudal agrarian structure briefly united workers, campesinos, scientists and politicians in common cause and discourse.

The call for an agrarian reform was also supported by progressives who were concerned about the social consequences of poverty and the escalation in food prices. In August of 1951, the *Alianza Femenina Guatemalteca* voiced their concern about the rising cost of living. They argued that since 1946 the price of basic goods had risen almost 300%, while wages had remained relatively stagnant. Food production had also not kept up with surging population growth. As a result, urban workers, small business owners and campesinos struggled to feed their families.[13] In emotional language, the *Alianza* implored Guatemalans to take notice of the growing misery besetting the poor: "The picture becomes bleaker when we face hunger and the cries of our malnourished children." The *Alianza* argued that as citizens and mothers driven by "the infinite heart of motherhood," they had to fight against the rising cost of living. They called on mothers to join with rural communities in protest against rising costs and support Arbenz's push for agrarian modernization and reform.[14] Their call was supported by the Federation of Unions of Guatemala, who also called for the government to protect Guatemalans by intervening in the market and imposing price controls on basic goods.[15]

Arbenz used price controls and wage increases to alleviate rural instability and urban poverty while he worked with leading members of the Guatemalan Communist Party (PGT) and Leonardo Castillo Flores, the leader of the National Peasant Confederation of Guatemala (CNCG) to draft agrarian reform legislation.[16] By preventing speculation and ruinous price fluctuations, price controls encouraged farmers to plant basic grains and raise cattle for milk and meat that would be consumed domestically. In 1950, the government increased the minimum wage to 80 centavos on national farms but workers had to press landowners and even state-run farms to comply with the law.[17] The increase in the minimum wage was a significant victory for workers, who had earned less than 40 centavos per day. This was not enough to buy basic staples, let alone proper clothing, medicine and education. Landowners often supplemented

[13] It is difficult to quantify how urban gardens and milpa plots affected urban food security. Way notes that the city discouraged crop cultivation and livestock in the city. In the 1930s, Public Works campaigned against corn cultivation although illicit cultivation continues to occur in ravines on the edges of the city where government authority is weakest. Way, *The Mayan in the Mall*, 51.
[14] "¡Contra la Carestia de la Vida!: Declaracion de Alianza Femenina Guatemalteca," *Octubre*, August 17, 1951.
[15] "Resoluciónes del 3er Congreso de la Federacion Sindical de Guatemala," *Octubre*, September 6, 1951.
[16] Gleijeses, *Shattered Hope*, 145.
[17] Handy, *Revolution in the Countryside*, 70; Forster, *Time of Freedom*, 175.

meagre wages with food rations and land, but these were not guaranteed privileges and could be taken away from troublesome workers.[18] Forster notes that when workers protested for better wages and basic labour rights "planters almost instinctively declared war on customary rights. They attacked where they thought it would hurt the most."[19] The Communist Party and the Revolutionary Workers' Party of Guatemala (PROG) also criticized the new minimum wage because it fell short of the "the minimum necessary to live half-decently." They encouraged further wage increases as a means to improve worker welfare and create new consumers whose purchases would support Guatemala's small industrial sector.[20]

Arbenz and other progressives believed that an agrarian reform was the first step in a larger economic transformation that would turn Guatemala into a modern nation with a strong industrial sector. Carlos Manuel Pellecer, an influential labour organizer, argued that "[w]ithout an agrarian reform we cannot speak about industrialization in Guatemala." Pellecer argued that beneficiaries of the agrarian reform would establish small farms which would increase food production and rapidly lower food costs. This would enable the majority of Guatemala's campesinos to abandon subsistence agriculture and become wage-labourers on plantations or factories.[21] The freedom to become wage-labourers or establish lowland farms came with the implied cost of abandoning subsistence agriculture and the aspects of indigenous culture perceived as antithetical to modernity. As Marx observed, losing control of the mean of production was capitalism's way of ensuring that workers were "free and unfree": free to sell their labour or crops, but wholly dependent on the market for their social reproduction.[22]

Some modernizers wanted to create a socially conscious form of industrial agriculture that paid workers well but achieved high productivity by emulating the organizational structure of the United Fruit Company. In April 1951, agronomist Benjamin Motta contacted the Ministry

[18] "'Editorial: ¡Conquistar el Salario Mínimo de 80 Centavos!'" *Octubre*, August 1951. For discussion of low wages and the desperation of campesinos trying to keep up with inflation by working on multiple plantations see Forster, *Time of Freedom*, 173.
[19] Forster, *Time of Freedom*, 171.
[20] Arbenz reiterated this point in his March 1954 address, noting that many beneficiaries of the Agrarian Reform made over Q 1 000 in their first year on the land. These campesinos invested in radios, shoes, new clothes and even unthinkable luxuries likes lotions and perfumes. For Arbenz, this external show of wealth demonstrated both intrinsic value of the Agrarian Reform as a tool of poverty eradication but also the extrinsic value for the nation and its industrial sector. Jacobo Arbenz, "La Politica Economica en el Informe Presidencial," *Monitor Del INFOP*, Vol. 5: No. 20 (1954): 18; "'Declaración Conjunta del Partido Comunista y del Partido Revolucionario Obrero de Guatemala, Acerca del Salario Minimo de Ochenta Centavos,'" *Octubre*, September 6, 1951.
[21] Carlos Manuel Pellecer, "Por la Prosperidad de Nuestra Patria," *Octubre*, October 18, 1951.
[22] Karl Marx, *Capital Volume I*, trans. Ben Fowkes (London: Penguin Classics, 1990), 272-273.

of Agriculture with a plan to re-organize national farms on Guatemala's South Coast into a new organization called the Union of National Farms. His plan, supported by the Association of Agronomists, would have divided national farms in the South Coast Departments of Retalhuleu and lowland Quetzaltenango into 3 groups determined by climate, altitude and region. Citing a 40% drop in yields since expropriation of farms from German citizens during World War II, Motta suggested the Arbenz government needed to emulate the administrative and agricultural initiatives undertaken by the United Fruit Company. Motta encouraged transforming antiquated working conditions predominant on the South Coast by creating modern and hygienic housing for workers and a sanitary institution to look after workers when they fell ill or suffered accidents. "Introducing modern methods to agricultural holdings in the UFN," wrote Motta, "will be undertaken...to socialize labour, to raise the standard of living of Guatemalan campesinos."[23]

Under Arbenz, the state wielded agrarian modernization as a tool to increase agricultural productivity and improve rural wellbeing. Motta attacked previous agrarian models as extracting earnings for the benefit of foreign banks:

> this old tendency caused much ruin among our campesino families, redounding to the detriment of national life. In my proposal, the state is not going to make a profit, the state will protect. We have to consider that the wealth of the state depends on the wellbeing of its citizens.[24]

The centralized administrative structure of the UFN was, Motta argued, the perfect way to drive agrarian modernization and improve the lives of campesinos who had been "relegated to oblivion." Motta argued the state had to think about "their housing, the water they drink, the food they consume, their right to adapt to the culture." He concluded that a fair wage—facilitated by increased productivity under the UFN—would allow campesinos to secure all of their basic needs.[25]

The UFN never came to be because most of the National Farms were redistributed to campesinos and workers during the agrarian reform. Yet the report offers an interesting insight into the importance of wellbeing as part of agrarian modernization initiatives. Motta's belief that improving productivity would encourage campesinos to become modern workers exposed the racism that permeated well-intentioned rural development efforts. Arbenz and fellow

[23] Motta's political affiliations are not mentioned. Benjamin Motta, "Proyecto de Organización de Finca [Union]," 10 April 1951. Min. Ag. Legajo 421. AGCA. Guatemala.
[24] Ibid.
[25] Ibid.

progressives continued to encourage indigenous assimilation as part of a broader campaign to improve rural welfare.[26] The final part of Motta's list of rights included "their right to adapt to the culture," a stipulation that indicated his belief that agrarian modernization would facilitate the assimilation of the Maya and the creation of a new, national consciousness.

Throughout the Revolution, the government tried to guide the transformation of unruly indigenous subjects into modern citizens that engaged with the market as labourers or producers. Manuel Pinto Usaga, formerly a member of INFOP's Superior Directive Council, identified hunger and poverty as the cause of growing peasant discontent and agitation. "For a country that lives ill, poorly fed, and in the most absolute abandon," wrote Pinto Usaga, "there is no other choice but to fight for rights within the possibilities offered by law and democratic institutions."[27] His emphasis on poverty as the principal cause of rural conflict was a rebuttal of right-wing critics who accused labour organizers of misleading naïve campesinos with communist ideals.[28] However, Pinto Usaga's argument also subtly undermined the political agency of the peasantry because he worried that uncontrolled population growth would destabilize Guatemala. "Statistics," argued Usaga, "prove that we are poorly fed, have an inadequate diet, live in unhealthy housing and with an insane promiscuity."[29] His analysis reduced campesinos to ignorant and teeming masses that had to be led out of poverty by educated reformers.

Although they had good intentions, in the early years of the Revolution Guatemalan modernizers—moderate and progressive—dismissed the transformative potential of cooperation. Organizations like INFOP, agronomists like Motta and labour activists like Usaga insisted on bringing development to campesinos as a means of incorporating them into the nation-state, rather than enabling them to forge their own path. This attitude was reinforced by demographics

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[26] For assimilation focus of state policy, see Handy, *Revolution in the Countryside*, 48-52.
[27] Manuel Pinto Usaga, "Unidos Podremos Conquistar Nuestras Reivindicacciones y las de Todo el Pueblo," *Octubre*, October 25, 1951.
[28] Communist manipulation of the peasantry was widely accepted rationale for the uprisings that gripped El Salvador in 1932 and ended in the massacre of activisits and campesinos alike by the military. Subsequent interpretation has called into question this narrative: communist organizers aided Indigenous peasants to organize but peasants brought distinct grievances and goals to their resistance of the Salvadoran establishment. Jeffrey Gould and Aldo Lauria-Santiago, *To Rise in Darkness: Revolution, Repression, and Memory in El Salvador, 1920-1932* (Durham: Duke University Press, 2008). Also see Roque Dalton, *Miguel Mármol* (Curbstone Books, 1995) for early communist organizing experiences in Guatemala which focused on education.
[29] Manuel Pinto Usaga, "Unidos Podremos Conquistar Nuestras Reivindicacciones y las de Todo el Pueblo," *Octubre*, 25 Octubre (1951), p2.

which divided reformers from the peasantry. Most Guatemalans lived in the countryside where they had little access to education, whereas experts were part of a small but growing middle class that was concentrated in the Capital. However, growing political tensions following the election of Arbenz opened up the space for a new relationship between experts and campesinos that transcended cultural and geographic barriers. The new President relied on the political support of campesinos and his administration was responsive to their demands. The 1952 Agrarian Reform Law extended the state into the countryside and brought campesinos, technicians, and progressives into close and frequent contact. The experience fostered increased respect between state officials and the communities they sought to aid. Though this moment was all too brief and never free of conflict or disagreement, it signaled the possibility that cooperation between the state and its citizens could create lasting rural change.

Agrarian Reform

After years of negotiation and planning, the Arbenz administration finally passed an Agrarian Reform Law in June of 1952. The law was moderate and it was implemented efficiently, notwithstanding opposition from large landowners and frustration from campesinos who wanted it to move faster. In two years, the government expropriated and redistributed an estimated 917,659 acres of land to 87,589 people who received roughly 10 acres each although this varied depending on the quality of land.[30] Campesinos who received previously worked land were given between 8.5 and 17, whereas beneficiaries who received undeveloped land were given between 26 and 33 acres.[31] The reform process was directed by the National Agrarian Department (DAN), which reported directly to President Arbenz. The organization also had Departmental Agrarian Committee's (CAD) for each region and Local Agrarian Committees (CAL), the latter was formed when there was a case for expropriation to be judged. The five member CAL's was appointed with one member selected by the Governor, one by the municipality, and three by the local peasant or worker union.[32] Though the government oversaw the expropriation process, the denunciations were initiated by groups of campesinos. The agrarian reform transformed Guatemalan society and the economy, by distributing land and credit to long marginalized campesinos.

[30] Handy, *Gift of the Devil*, 128-129.
[31] Immerman, *The CIA in Guatemala*, 65.
[32] *Ley de Reforma Agraría.* Decreto 900. 1952. Chapter 2.

The Agrarian Reform Law opened new land for development and empowered peasants, but it also dramatically increased pressure on forests, soils and watersheds. Decree 900 stipulated that farms under two caballerias were exempt from expropriation and plantations under six caballerias were exempt if they could demonstrate that at least two thirds of the land was being actively cultivated or used to maintain livestock. Plantations over six caballerias were liable to expropriation, though the amount redistributed varied on how that land was being used. The government offered special exemptions for property owners who could demonstrated that their land was being used rationally to grow crops considered important to national development like coffee, cotton, sugar, rubber and cereal crops. This also included protections for cattle ranchers, provided they meet the stipulated carrying capacity for their designated region. These clauses incentivized landowners to intensify production and rapidly modernize so that they could avoid expropriation.[33]

The expropriation process was largely driven from below, but the government attempted to protect key resources from expropriation by embedding conservation in the spirit and the letter of the Agrarian Reform Law. Decree 900 had special clauses that protected land on slopes over 30% and bordering watersheds from expropriation.[34] These regulations were sometimes ignored in the rush to distribute land to campesinos, but their presence indicates that the government saw conservation as a means of sustaining the productivity of Guatemala's best farmland.[35] The government also offered beneficiaries the option of receiving land in property or usufruct, this depended on the method of expropriation and in practice most of the land was awarded in life long usufruct. The government required that land redistributed to campesinos from National Farms had to be given out in usufruct. Decree 900 stipulated that usufruct could be revoked if

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[33] *Ley de Reforma Agraría.* Decreto 900. 1952. Article, 10.
[34] *Ley de Reforma Agraría.* Decreto 900. 1952. Article, 11.
[35] Handy, *Revolution in the Countryside*, 100. Like American conservationists, Guatemalan technicians and policymakers saw conservation as a means to extend the bounties of nature so that economic growth could be sustained over time. Their preference for saving the highlands at the expense of lowland ecoregions reflects cultural ideals about the best kind of nature. For discussion of American conservation movement see Roderick Nash, *Wilderness and the American Mind*, (New Haven, Conneticut: Yale University Press, 1982); Neil M. Maher, *Nature's New Deal: The Civilian Conservation Movement*, (Oxford: Oxford University Press, 2008). For deployment of these ideas outside of an American context see Matthew Evenden, *Fish Versus Power: An Environmental History of the Fraser River*, (Cambridge: Cambridge University Press, 2004) and for conservation in Latin American context see Sterling Evans, *The Green Republic: A Conservation History of Costa Rica*, (Austin: University of Texas Press, 1999) and Emily Wakid, *Revolutionary Parks: Conservation, Social Justice, and Mexico's Natural Parks, 1910-1940*, (Tucson: Arizona University Press, 2011) and for ideas about the tropics see Nancy Ley Stepans, *Picturing Tropical Nature,* (Ithaca: Cornell University Press, 2001).

campesinos did not plant the crops mandated by the government. This was justified as a means to maintain the production of crops that were important to the national economy—including coffee—but it also indicated the government's preference for state-led economic development. The usufruct model advocated by INFOP and instituted during the agrarian reform gave the state extra-leverage to guide campesino production.[36] Throughout the agrarian reform, experts struggled to balance conservation with efforts to diversify crops and increase food production.

The Agrarian Reform Law guaranteed that beneficiaries would receive the technical support needed to create a "capitalist campesino economy" including credits and access to new crops and fertilizers.[37] The implementation of Decree 900 was technically overseen by the National Agrarian Department (DAN), but the Arbenz administration directed all government departments to support the process with technical and financial assistance. This had an immediate political benefit for the Arbenz administration: campesinos who received prompt and effective assistance from the state expressed fervent political support for Decree 900 and President Arbenz. Letters addressed to the Minister of Agriculture were responded to quickly, even though technically they fell under the jurisdiction of the DAN. The Ministry of Agriculture publicly stated its commitment to helping Decree 900 beneficiaries diversify production so that Guatemala could raise food production and improve the nutrition and wellbeing of workers and campesinos.[38]

In April of 1953, the CAL of Puerto San José wrote to the Minister of Agriculture directly, requesting rice seeds of the blue bonnet variety that had recently been featured in the newspaper, *Nuestro Diario*. The Ministry of Agriculture approved the Local Agrarian Committee of Puerto San José's request for seeds in just two weeks, a very rapid response considering the provision of seeds was technically the responsibility of the DAN. In lieu of payment, they asked the Committee to return an equal amount of seeds to the Ministry so that they could continue propagating seed stock.[39] Another letter sent by the Local Agrarian Committee of Pueblo Nuevo Viñas in April 1953 reported on the success of education efforts and urged the Ministry to quickly send more pamphlets about modern agriculture. They ended

[36] *Ley de Reforma Agraría.* Decreto 900. 1952. Article 23, 38.
[37] *Ley de Reforma Agraría.* Decreto 900. 1952. Article, 3.
[38] Miguel Villegas Rodas, "Aumentar, Mejorar y Diversificar los cultivos, Meta del Ministerio de Agricultura," *Revista Agricola,* Vol 1: No. 2 (1953).
[39] "Comité Agrario Local del Puerto San José to Minister of Agriculture," April, 1953. Ag. Leg. 1940. AGCA. Guatemala.

their letter with a pledge of support for Decree 900, "whatever it costs, so that we have a new Guatemala" under the government of Jacobo Arbenz.[40] Their language evoked the rhetoric of the administration, but these letters also indicate that Decree 900 beneficiaries were eager to adopt new techniques and tools.

The Ministry of Agriculture viewed Decree 900 as an extension of their conservation work. The Ministry's Soil Conservation Division warned Guatemalan officials in 1953 that production still lagged behind population growth and they supported efforts to move campesinos out of the highlands. The Division concluded that 12.4 quintales of corn per manzana was just enough to feed the population in 1949-1950, but they anticipated that rapid population growth and diminishing yields would result in serious shortages by 1956. The Division argued that with technical assistance campesinos could double their yields in less than a year without expanding the amount of land under cultivation. "If we make good use of our natural resources," wrote the Division head, "we will get more crops to live better."[41]

By distributing land to campesinos, the Arbenz administration hoped to solve food production problems and transform campesinos into small yeoman farmers. Promotional material produced by the Ministry of Agriculture idealized the family farm that Decree 900 recipients would inhabit, portraying mixed-land use on rationalized and nucleated settlements. This advertisement featured an indigenous family and cultivated the notion that the reform integrated the nation by helping small families engage in market farming (Figure 11). However, no mention was made of the larger community that supported campesinos during the difficult process of clearing and planting new land. Instead, the advertisement implied that the conditions for the family's happiness and productivity were created by the state. Though campesinos experimented with new farming techniques and new crops, the farms they created did not wholly correspond to the neat, idealized models promoted by the state.

[40] "Comité Agrario Local de Pueblo Nuevo Viñas to Minister of Agriculture," April 21, 1953. Min Ag. Leg 1940. AGCA.

[41] They estimated that yields would increased to 20-25 quintales per manzana within a year, and then to nearly 36 quintales per manzana within several years. Maximo L. Godinez M., "Plan General de la Division de Conservacion de Suelos, Para los Trabajos Efectuarse Durante el Año Fiscal de 1952/1953," n/d, Min Ag. Leg 421. AGCA. Guatemala.

Figure 11: Ideal Farm under Decree 900[42]

The mundane process of measuring and distributing land created an opportunity for technicians and campesinos to interact and share ideas about conservation, farm management and land use. In these moments, campesinos subtly shaped the division of land to strengthen their communities. For example, when Union Campesina members from Santa Maria Cauqué received land in Santiago Sacatepéquez the local CAL worked with Soil Conservation officer Virgilio Recinos to parcel out land. He used an oxen-drawn plow to divide 36 manzanas of land into 50 parcels. Campesinos were awarded land through a raffle system, but they successfully kept six parcels free which they planned to farm together for the benefit of the community. After land was distributed, the Soil Conservation Division began levelling land to minimize soil erosion and campesinos agreed to follow technical advice when planting and cultivating crops. This distribution of land struck a balance between conservation and community needs. By protecting

[42] "Reforma Agraría," *Revista Agrícola* vol 1, no. 2 (1953).

their control of land, the community re-established the basic structures that historically enabled them to retain corporate control over land and resources under colonialism.[43]

Beneficiaries of Decree 900 welcomed state assistance, but their gratitude did not prevent them from lobbying for faster assistance. The National Peasant Confederation of Guatemala (CNCG) was an important intermediary and advocate for new communities.[44] Beneficiaries of the Agrarian Reform Law sent complaints, petitions and requests to the Secretary General of the CNCG, Leonard Castillo Flores, which he presented to the pertinent Ministry.[45] In March of 1953, the CAL of Limones in Ocós, San Marcos wrote to the Secretary General of the CNCG Leonard Castillo Flores looking for a tractor to work their new land on the Santa Clara Ranch. They promised to collectively pay the fee for mechanization services but urged Castillo Flores, "our right arm", to help them locate equipment.[46] Castillo Flores quickly forwarded the letter to the Minister of Agriculture.[47] The Sub-secretary of Agriculture marked the request urgent and it was immediately approved by the Department of Agricultural Mechanization. When Agronomist José Antonio Vega visited the ranch in April, he concluded that only five community members could pay for services but he encouraged the Department to extend loans to campesinos because the area was very fertile. Antonio Vega estimated that on fertile coastal land each campesino could produce roughly three quintales of corn per cuerda—roughly 48 quintales per manzana—on a 40 cuerda parcel of land.[48] The Department of Mechanization approved the compromise and within two months the CAL of Limones had the financial means to mechanize their farms. Their success demonstrated that campesinos who framed their demands in the language of modernization and productivity had more success when lobbying the government.

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[43] As Jim Handy noted, denunciations often "reflected the continuing perception of the land as a community resource, and the determination of those petitioning the agrarian agencies to use the law to strengthen the community." See Handy, *Revolution in the Countryside*, 146-147. The farm was Manzanales see Acta No. 6 in "Minister of Agriculture, Nicolás Brol to Señor Gabino Alvarez y Compañeros c/o Comité Agrario Local de Santa María Cauqué, Sacatepéquez," April 26, 1953. Min Ag. Leg 1940. AGCA. Guatemala.

[44] For extended discussion of CNCG see Handy, *Revolution in the Countryside*, 72-73.

[45] For Castillo Flores' role in the CNCG and efforts to help campesinos see also Handy, *Revolution in the Countryside*, 96-97. For the internal politics of the CNCG and its efforts to support the revolution while remaining nominally non-partizan see Glejesis, *Shattered Hope*, 172-173.

[46] "CAL, Limones, Ocós, San Marcos to Castillo Flores, Secretary General of CNCG," March 11, 1953. Min Ag. Leg 1940. AGCA. Guatemala.

[47] "Letter to Minister of Agriculture from Leonard Castillo Flores, Sec. General of CNCG," 18 March, 1953. Min Ag. Leg 1940. AGCA. Guatemala.

[48] "Providencia No. 1: Zone 3, Retalhuleu," April 11, 1953. "Acta No. 20," 8 April 1953, Min Ag. Leg 1940. AGCA. Guatemala.

This scenario was repeated throughout Guatemala as beneficiaries of Decree 900 used their membership in the CNCG to request seeds, tractors, pesticides and more from the state. The Ministry of Agriculture and INFOP had largely succeeded in establishing scientific intervention as a necessity for modern farms and agronomists became crucial intermediaries between the state and the peasantry. As they laboured alongside campesino communities, technicians gained their trust and respect and they were regarded as regional assets. In June of 1953, Castillo Flores asked the Ministry of Agriculture to immediately cancel the transfer of Alfonso Castañeda, an agronomist in the Soil Conservation Department, Secretary General of the CNCG for Jalapa and member of the CAD. Castillo warned that transferring Castañeda would cripple Jalapa's efforts to combat erosion.[49] The Ministry wrote back the following day assuring Castillo Flores that Castañeda would not be transferred to a major pest control initiative.[50] The Ministry's willingness to cancel the transfer of a talented agronomist, indicated both the growing political power of Castillo Flores and the sway that the campesinos could exert if they spoke the language of conservation.

Campesinos who received land during the agrarian reform sometimes found that conservation was used against them by agronomists. Landowners often complained that campesinos invaded their property without permission or settled on land that was not eligible for expropriation. The Arbenz administration tried to balance the growing opposition of landowners with the concerns of campesinos, who were anxious that land was not being expropriated fast enough.[51] As these property conflicts unfolded, landowners tried to use the government's evident concern about conservation to force the government to intervene in their favor. For example, in February of 1953 the United Fruit Company complained to the Forest Inspector for Eastern Department of Izabal that campesinos were illicitly occupying their land. The UFCO framed its concerns in the language of conservation, warning that campesinos were clearing valuable forests close to the water source used by the town of Morales and their plantation, Bananera.[52]

The Forest Inspector launched an investigation and concluded that the local CAL had subdivided 5 caballerias of UFCO land, which contained precious lumber that was protected

[49] "Castillo Flores to the Minister of Agriculture," June 18, 1953. Min Ag. 1940. AGCA. Guatemala.
[50] "Minister of Agriculture to Castillo Flores," June 19, 1953. Min. Ag. Leg. 1940. AGCA.
[51] Though landowners complained about invasions, it is difficult to judge if their complaints were accurate or a willful misindenfication of expropriation as invasions. Handy, *Revolution in the Countryside,* 105-110. For another example see Chapter 6.
[52] "UFCO to Señor Guardia Forestal de Morales," February 18, 1953. Min Ag. Leg 1940. AGCA. Guatemala.

under Decree 900. Though he sympathized with their desire for access to the lumber, he claimed that their settlement threatened an important watershed and encouraged resettlement on nearby land. The Inspector argued that the law protected campesinos and landowners by conserving land that might otherwise be destroyed by short-sighted speculation. "It is our obligation," he wrote, "to avoid by all means a destruction which will cause in time irreparable damages for the same campesinos who forget precaution for tomorrow."[53] His even-handed approach to the case did little to quell campesino grievances because it appeared to favor the United Fruit Company. The local CAL accused the inspector of collusion with the UFCO and asked for his immediate dismissal.[54] The Ministry of Agriculture investigated and exonerated the Inspector who was surprised by the allegations.[55] Campesinos who did not demonstrate their devotion to conservation—as defined by the state—lost valuable political capital which harmed their efforts to obtain the financial and technical assistance necessary to develop their new land.[56]

The Arbenz administration worked diligently to support Decree 900, but the speed and the scale of the reform stretched the state to its financial and administrative breaking point. The promised financial and technical assistance often did not materialize in a timely fashion. In August of 1953, the CNCG held an assembly where beneficiaries of Decree 900 and workers on National Farms discussed their problems. They asked the President and INFOP to abolish the debts of Decree 900 recipients. Many of these debts had been incurred on plantations and campesinos who received land were often extorted by their former employers. They also encouraged the state to provide campesinos with more credit—on par with the wages of national farm workers—and to ensure that loans were fulfilled more quickly.[57] The CNCG planned to release its recommendations for technical reforms at the end of August, but they reached out to

[53] "Letter to Director General Forestal from Isidro Juarez Orellana, Guarda Forestal de Morales" 21 Feb, 1953. Min. Ag. Leg. 1940. AGCA.
[54] (8756) "Memorandum de la Confederacion Nacional Campesina de Guatemala al Senor Ministro de Agricultura" 18 May, 1953. Min Ag. Leg. 1940. AGCA.
[55] "Virgilio H. Alvarado, Inspector de Bosques, Zona #3 to Director General Forestal," July 20, 1953. Min Ag. Leg 1940. AGCA. Guatemala.
[56] For a discussion of competing conservation ideals in Mexico and early attempts to guide Indigenous peoples to a state vision of conservation see Christopher R. Boyer, *Political Landscapes: Forests, Conservation, and Community in Mexico*, (Durham: Duke University Press, 2015), 4-5, 10, 12, 123.
[57] They also encourage labor law reforms that allowed workers from National Farms to remain in their union. The current law forced beneficiaries of Decree 900 to organize in alternative unions, including "sindicatos de trabajadores parcelarios." The CCTG attacked these regulations as an arbitrary act of "political sabatogue" that favored administrators of Ingenios and Beneficios. "Resoluciones de la Asamblea Nacional de Trabajadores de Fincas Nacionales, Celebrada el Día 1 de Agosto, 1953," August 3, 1953. Min Ag Leg. 1940. AGCA. Guatemala.

the Minister of Agriculture to solicit feedback beforehand. The Ministry urged the CNCG not to release its report. They invited the CNCG leadership to privately advise the Ministry by reviewing a report that would shortly be sent to the President.[58] The Ministry of Agriculture tried to control the political message so that they could avoid unanticipated demands that might be made by beneficiaries of the Agrarian Reform Law.

The Ministry had ample reason to be concerned about public criticism of the agrarian reform and their rural development strategy. By late 1953, Arbenz's agrarian modernization initiative was threatened by growing political opposition and budgetary constraints. The Agrarian Reform Law excited intense opposition from domestic elites and international actors, especially the United States, which also prevented the government from accessing international capital.[59] The Arbenz government promoted its efforts to redistribute land, but the resolutions drawn up by the CNCG and the General Confederation of Workers of Guatemala (CGTG) pushed the state to invest even more in rural reform. [60] Though letters sent to the Ministry of Agriculture remained, on balance, positive there was a growing number of frustrated missives sent by CAL's eager to access fertilizers, seeds, tractors and technicians promised by the Arbenz administration.[61] These requests were often urgent since beneficiaries of the agrarian reform wanted pesticides to control disease and pests that threatened their new crops.[62]

The case of Las Trojes, a campesino community in the interior Department of Amatitlán, highlights the difficulty of managing a sprawling bureaucratic machine that tried to aid new farmers settling new land. In April 1953 the CAL of Las Trojes, a community in the interior Department of Amatitlán, asked the Minister to send 25 quintales of the pesticide Gamexan as

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[58] "Letter to Secretário General de la Confederación Nacional Campesina from Nicolas Bról, Minister of Agriculture." August 5, 1953; "Minister of Agriculture to Secretário General of CNC," August 6, 1953. Min. Ag. Leg. 1940. AGCA. Guatemala.

[59] Glejesis, *Shattered Hope*, 167-170.

[60] Promotional materials from June 1953 emphasized the Agrarian Reform's success, in spite of critics who predicted disaster. "Editoriales: Reforma Agraria," *Boletín Nacional*, Secretaía de Propaganda y Divulgación de la Presidencia de la Republica, No. 14, June 17, 1953. Min. Ag. Leg. 1940. AGCA.

[61] For example, in June 1953 the CAL of Barbarena thanked the Ministry for technical assistance and informed them that their parcels were planted and work was underway to prevent soil erosion. A subsequent letter asking for Zacatón and Jaragua to establish vegetative barriers to slow soil erosion prompted rapid action and within two weeks the Soil Conservation Department had fulfilled the request. "Guillermo Reyes, President of Comité Agrario Local to the Minister of Agriculture, Telegram," June 11, 1953; "Min Ag. From Guillermo Reyes, President of CAL Sabanetas, Barberena, to Minister of Agriculture," June 8, 1953. Min. Ag. 1940. AGCA. Guatemala.

[62] In May 1953, campesinos at Cuilapa, Santa Rosa urged the Ministry to send a brigade to destroy rats attacking the crops of many Union Campesina communities in the area for the good of the national economy. "Leonardo Castillo Flores, Secretary General, CNCG to the Minister of Agriculture," May 27, 1953. Guatemala. Min. Ag. Leg. 1940. AGCA. Guatemala.

soon as possible so that farmers could plant: "if we do not have poison, we will be victims of the plagues."[63] After a second request was made by Las Trojes, an agent was dispatched by the Division of Plant Health. He reported that campesinos had planted their 15 manzana parcels with a diverse array of crops including beans, chickpeas, corn and yucca. He suggested that 25 quintales of Gamexan was far too much and advised the Ministry to use a less expensive admixture of sulfur and arsenic with just five quintales of Gamexan as a supplement. The advice was never acted upon, however, due to a disagreement about jurisdiction. A month later the CAL wrote back to the Ministry for the third time, requesting immediate intervention because "zompopos," a type of flying ant, were ravaging their fields.[64] Though Las Trojes eventually received state assistance, it was only their admirable persistence that forced the Ministry to take notice of their case. Given that they had acquired their land in August 1952, just months after the Agrarian Reform Law was passed, it is likely that they were well organized and adeptly navigated the necessary bureaucratic roadblocks.[65] Their communication issues presaged troubling problems as the government struggled to allot limited supplies to agrarian reform beneficiaries.

Although technical services were important for farmers, the availability of credit also determined the success of Decree 900 beneficiaries. New and more flexible sources for rural credit were available through INFOP, the National Mortgage Bank of Guatemala (CHN), and the National Agrarian Bank (BNA).[66] Almost one sixth of government spending in 1953-54 was committed to loans. The state hoped this generous credit and loan policy would reverse Guatemala's chronic shortage of liquid capital and jump-start domestic productivity.[67] In a radically unequal country, most campesinos had never had access to capital which they could invest in their own land. Speaking generally about the importance of new credit initiatives, in 1951 INFOP's Director claimed that they had broken with convention by giving credits to "small farmers who arrive at the doors of the Institution with calloused hands and faces blackened by

[63] "Letter to Minister of Agriculture from Juan Rozas, Presidente CAL, Las Trojes, Amatitlán to the Minister of Agriculture," April 17, 1953. Min. Ag. Leg. 1940. AGCA. Guatemala.
[64] "Juan Rojas, President, CAL, Las Trojes, Amatitlán to Minister of Agriculture," May 17, 1953. Min Ag. Leg. 1940. AGCA. Guatemal.
[65] "Report on Las Trojes, Amatitlán by Miguel Ángel Reyes Molina, Jefe de la División de Sanida Vegetal," April 8, 1953. Min. Ag. Leg. 1940. AGCA.
[66] Although created in October 1953, the BNA was an important source of credits lending out Q6.5 million by April 1954. Handy, *Revolution in the Countryside*, 93.
[67] Gleijeses, *Shattered Hope*, 156-158.

the sun."[68] In April 1954, INFOP's Director Carlos Leonidas Acevedo told the Interamerican Conference of the Organization of American States that their credit program opened the way for a "new mentality and a new economic policy" in Guatemala.[69]

Though INFOP was eager to pronounce the credit program a success, many campesinos struggled to acquire the promised funds. Financial assistance was disproportionately focused on the area around Guatemala City and the Pacific Coast. The Department of Guatemala (Q 633 923.22) and Escuintla (Q 511 092.25) received the largest number of loans in 1953, several times more than the next largest recipient Retalhuleu (Q 117 993). The imbalance was created by the state's inability to effectively administer credits in remote areas and the political emphasis placed on coastal development.[70] Financial shortfalls and administrative issues often caused panic and crisis among farmers, who sought to improve their land but lacked the means to buy tools, seeds and inputs.

Consider the following letters sent by campesinos from the highland town of Panimaquip, Totonicapán. They were searching for funds to help them secure their corn harvest on newly acquired land. In June 1954, just weeks before the US-backed coup, campesinos wrote to Castillo Flores to help them secure loans from the National Agrarian Bank: "friend we are letting you know that our parcels are now cultivated[,] under our poverty we did struggle to make these land that were granted to us, to plant them with beans and corn." June in Guatemala is a difficult time because campesinos have exhausted their food reserves and are waiting for the harvest that happens as early as September and as late as November, depending on weather and altitude. The campesinos from Panimaquip were eager to secure funds from the Bank to help ensure a successful harvest. They wrote that "now is the time of our poverty, because we buy corn at 5.50 quetzales a quintal and for many reasons we are very poor now." They travelled to visit the Bank manager in the coastal city of Mazatanengo and he assured them that an inspector would come to

[68] For earlier statements about the importance of credits for small farmers see "Labor realizada por el INFOP en los anos 1949-1950," *Monitor Del INFOP*, Vol 2: No. 7 (1951): 19.
[69] He spoke to the 5th session of the Comission II. Carlos Leonidas Acevedo, "Guatemala en la X Conferencia Interamericana," *Monitor Del INFOP* vol. 5 no. 19 (1954): 3. At this same meeting, the US pushed other member nations to sanction their intervention in Guatemala because of a purported communist threat Handy, *Revolution in the Countryside*, 179; Gleijesis, *Shattered Hope*, 272-273.
[70] "Atención Crediticia por Departamenttos de la República Correspondiente del 1o. de Enero al 31 de Diciembre de 1953," *Monitor del INFOP*, Vol. 5: No. 19 (1954): 9-10. For a more detailed report on activities funding with INFOP credit see "Instituto de Fomento de la Produccion: Asistencia Crediticia Correspondiente a los Años de 1949 a Diciembre de 1953," *Monitor del INFOP*, Vol 5: No. 20 (1954), 7-8.

see their lands. After 15 days passed without any visit, they pleaded with Castillo Flores of the CNCG for a rapid intervention:

> [Y]ou have to consider that time passes and the crops need to be cleaned and what do we do without money to sustain ourselves while we clean these crops, and here there is no one to lend us a cent with which to buy corn and sustain us until help from the Bank comes.[71]

While they awaited the Bank's response they were forced to leave their new lands and work for others. "[T]oday," They wrote, "we are going with other compañeros to earn corn to sustain the family; because here we suffer with[out] maize because our harvest is yearly." Their harvest depended on receiving timely financial aid from the Bank so they could hire help to clean the fields and guarantee a good crop. "[W]ithout cleaning in our land," they concluded somberly, "the crop will be ruined and we will lose everything."[72]

The story of Panimaquip indicated that after two years, the agrarian reform had only partially accomplished its goals. Land had been redistributed and food prices had been stabilized, but many Decree 900 beneficiaries still lived in poverty. Campesinos working newly cleared land often lacked the financial means to buy the proper tools and seeds needed to plant and harvest their crops. When the state failed to fulfill its commitments, they often turned to plantation labour. To ensure the success of their crops, some sold the only possession they had: their labour. This vignette illustrates the paradox created by the rapid implementation of the agrarian reform: the government did not have the resources to match their rhetoric. These issues were magnified in the final months of the agrarian reform, when the growing hostility of large landowners and the shrinking financial means of the state prevented campesinos from developing their land.

"Sword of Damocles"

Though it was flawed, the agrarian reform successfully redistributed land to roughly 100,000 families. By 1954, the agrarian landscape was far more productive than it had been in 1952. Export production was growing quickly and food production was much more robust as Decree 900 beneficiaries established new households on their new land. Beneficiaries often experimented with new exports, but their first priority was to establish their new households by

[71] GuateDoc 8050P Mss 11, 555 Reel No. 50. Feet 101, Description: Correspondence of the Confederación Nacional Campesina de Guatemala (Reels 50-52)
[72] Ibid.

cultivating milpa, planting garden crops and raising small animals like chickens. The result was a more diversified agrarian landscape that realized, imperfectly, the dream of substantive reform that Arbenz promised in 1951. The success of the agrarian reform demonstrates the effectiveness of cooperation between campesinos and the Revolutionary government. Where previous efforts to transform the countryside tried to impose new crops and technologies on campesinos, Decree 900 created a political space where campesinos, technicians and bureaucrats could together to build a more diverse and equitable agrarian landscape. This promising moment was ended suddenly by the 1954 coup, but the memory of the agrarian reform as a time of social transformation where ethnic barriers were eroded shaped political activism throughout the 20th century.

The agrarian reform catalyzed sweeping environmental changes in Guatemala, especially on the Pacific Coast where it led to rapid deforestation and a surge in export crops. Decree 900 had clear rules that protected forests and watersheds, but the Pacific Coast was seen as a new frontier that had to be rapidly developed for the good of the nation. Large landowners tried to prevent expropriation by rapidly clearing their land and planting it with crops like cotton so that they could claim it was being rationally utilized. This was compounded by the influx of settlers who arrived eager to open new land, using tractors to clear the forest and employing pesticides to protect crops from pests.[73]

The Arbenz government heavily favored modern agricultural crops and actively discouraged cattle ranching, which had historically dominated the Pacific Coast. The Arbenz administration believed cattle ranching was inherently wasteful, because it monopolized land that could be used to produce crops that could be exported or used domestically, like cotton and corn. To discourage the seasonal cattle trade and force intensification, the Ministry of Agriculture and the DAN established strict carrying capacities for pastures in Guatemala's different ecoregions.[74] These figures were used during the agrarian reform to judge if Guatemalan ranchers were using their land effectively.

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[73] The timeframe was probably too short for meaningful regeneration to occur in the highlands where fallows were usually 5 years or more.

[74] From sea level to 500 metres was Zone 1. The Ministry of Agriculture and DAN decided the ideal carrying capacity: 50 head for natural pasture, 65 for cultivated, 90 for cultivated with irrigation. The Commision noted that these were rough guidelines that would be adapted to particular farms because Guatemala had no complete ecological map and significant zonal variation could occur. "Informe de La Comisión Específica Para la Determinación de índices de Ganado Bovino por Caballería de Pastizales, Para las Finalidades de la Reforma Agraria." April 15, 1953. Min. Ag. Leg. 1940. AGCA. Guatemala.

Facing regulatory pressure from the state and declining revenues, Guatemalan Rancher's Cooperative commissioned a report on the state of the cattle industry in 1953.[75] The report criticized ranchers for relying on extensive grazing to minimize their costs. Though Guatemala was a "paradise" with a climate capable of producing a wide variety of pastureland the report argued that extensive ranching wasted this natural advantage, raising the costs of production over time. The Cooperative found that ranchers on the Pacific Coast rotated grazing land infrequently and instead burned over 50% of their pastures to quickly rejuvenate grasses and suppress weeds. As overgrazed pastures grew less productive ranchers turned to the "heroic and completely prejudicial" use of fire "which every time impoverishes the land more."[76] Ranchers who invested little in their herds and pastures often struggled financially, burdened by sick and emaciated cattle that produced low quality meat, milk and leather. An addendum warned the industry that their own "anti-economic, antiquated and impractical" approach to cattle ranching had caused their economic malaise.[77]

By savaging their own members for their lack of foresight, the Rancher's Cooperative tried to reclaim the moral authority needed to guide state policy. Guillermo Gomar, the report's author, encouraged the government to lift price controls and export restrictions on meat. Gomar appealed to the Directorate-General for Livestock using the rhetoric of the day, economic stability, modernization and national well-being. He assured the Directorate that if they were able to modernize, ranchers could increase productivity and produce enough meat and milk—goods "vital for health"—to satisfy domestic demands. Gomar insisted that any surplus could be exported, which benefitted ranchers and the state because it brought in needed foreign exchange. The Directorate-General for Livestock rejected the Guatemalan Rancher's Cooperative proposal

[75] The cooperative complained that the Commission fixed the carrying capacity of pastureland too high. Ranchers in Retaluheu were hesistant to sell cattle because this would lower their herd size below the stipulated minimums and expose them to expropriation. "Cooperativa de Ganaderos de Guatemala to Min Ag., Economía y Trabajo y Jefe del DAN," April 15, 1953. Min Ag. Leg. 1940. AGCA.

[76] Guillermo Gomar M, "Estudio del Desarrollo de la Industria Pecuária en la Zona Sur de Guatemala," April 1953. Min Ag. Leg 421. Guatemala. AGCA.

[77] Guillermo Gomar argued that herds had low birth rates (below 60%) and high levels of mortality (30%). His personal testimony was that a 100 cows would birth 60 calves but only 42 would survive. Higbee 1947, noted that despite high death rates, the lushness of Guinea grass found in the Lower Pacific Piedmont allowed for continued growth of cattle herds. Addendum. "Estudio Del Desarrollo de la Industria Pecuária en La Zona Sur de Guatemala," June 1953. Min Ag. Leg 421. Guatemala. AGCA. Guatemala. Higbee, "The Agricultural Regions of Guatemala," 189.

to lift price controls and export restrictions legislated in 1947. Instead, they urged the President to tighten regulations on the cattle industry to ensure higher quality meat and milk.[78]

The Directorate-General had little sympathy for ranchers and they welcomed the rise of new exports and food crops as a more "intelligent utilization of the land." They argued that the cattle industry was being moved to better suited areas "without prejudice to the development of agriculture, to which it should be subordinate."[79] Their overt hostility to extensive ranching did not extend to the industry-at-large, where they encouraged ranchers to adopt new breeds, pasture grasses and feeds. The Directorate dismissed market-led development as a "vulgar gamble" which encouraged speculation and profiteering at the expense of consumers and conscientious producers. They advocated stringent quality and price regulations because they allowed farmers to stop worrying about price fluctuations—the "Sword of Damocles hanging over his head"—and produce high quality food.[80]

The Arbenz government successfully utilized Decree 900 to force recalcitrant landowners to diversify and modernize or lose their land. This radical reorganization of land tenure, crop regimes and labour relations transformed agriculture but it also entrenched elite hostility toward to the Arbenz administration. Landowners across the country defended themselves from expropriation by appealing to the government's emphasis on diversification and conservation. For example, the seven Barneond brothers who owned El Pabellón in the municipality of Escuintla, argued that they produced sugarcane, citronella, cattle and cereals for internal markets. They played on the government's overt commitment to conservation by emphasizing that they had spent all their lives "dedicated to conserve, cultivate intensively and care for this small farm" inherited from their ancestors who also supported national production.[81]

Large landowners across the Pacific Coast also tried to circumvent expropriation efforts by rapidly developing underutilized land. Cotton was popular because it grew quickly, offered high returns, and was actively promoted by generous financial incentives from INFOP. When Las Delicias, Retalhuleu, was denounced in October 1953, campesinos and workers submitted conflicting reports about the amount of land comprised by the farm and its quality. Estimates

[78] "Consideración de la Dirección General de Ganadería a la Exposición que la Cooperativo de Ganaderos de Guatemala Presento Al Ciudadano Presidente de la Republica," Min Ag. Leg 421. AGCA. Guatemala.
[79] Ibid.
[80] Ibid.
[81] "Letter to Consejo Agrario Nacional from Oscar Barneod Ovares, et al." El Pabellon, Exp. 7 Paq. 1. Ind. 14. DAN Decree 900. AGCA. Guatemala.

ranged from 38 to 50 caballerias and even the Local Agrarian Committee had difficulty confirming the size of the farm.[82] Ernesto Rodriguez Briones, a representative for the Sociedad Agrícola Las Delicias, wrote to the Departmental Agrarian Commission (CAD) to protest that the farm was only 28 caballerias. He argued that his plantation operated coffee, sugar and cattle operations for sixty years and had recently diversified into bananas and, in 1950-51, cotton. Although it stated its uncertainty about the size of the farm, the CAD eventually approved the expropriation of 15 caballerias: substantially less than the 25 caballerias requested by those who denounced *Las Delicias*.[83]

Rodríguez Briones failed to disclose to the CAD that over 9 caballerias of Las Delicias was sold to Carlos Chessmann Mollidon in March of 1952, a few months before the agrarian reform became law. Rodriguez Briones tried to circumvent expropriation by pre-emptively dividing his property. This was technically prohibited, but Briones was able to initiate the division and secure the sale before restrictions on the transfer of land took effect.[84] The new plantation was appropriately named *El Porvenir*, or the future: aerial photos revealed a startling transformation of land use between 1947 and 1954 (Figure 12). The wholly forested plantation was quickly developed by Chessman, who had planted 140 manzanas in cotton and rice fields by 1954. He had also deforested 160 manzanas, which he planned to plant with cotton (Figure 13). The threat of expropriation drove rapid changes in land use as property owners attempted to circumvent Decree 900 to limit their exposure to expropriation. When this case was reviewed by the Consejo Agrario Nacional, they discovered the obfuscation but eventually agreed that both farms were well developed and cut the amount of expropriated land by two thirds.[85] This decision drew scorn from Decree 900 beneficiaries who argued that the remaining swathe of land

[82] "Denuncia de tierra de la finca 'Las Delicias,' propiedad de la Sociedad Agricola Las Delicias, Maria B. de Rodríguez y Cía." Las Delicias, Exp. 3. Paq 5, Retalhuleu, DAN D900. AGCA.
[83] Rodríguez Briones claimed multiple exemptions. First, he argued that María Briones v. de Rodriguez held no land directly, rather the Sociedad Agricola Las Delicias managed the property. According to Decree 900, Article 10, subsection (d) farms that hosted a company cultivating key exports like lemongrass, bananas, coffee and more were inelligible for expropropriation. He also claimed an exemption under Clause (f) which excluded farms that exceeded the recommended requirements for cattle per caballeria, a norm which varied by region. The farm had 1, 168 horses, or between 56 and 60 head per caballeria and was divided between pastures (19 caballerias), coffee (42 manzanas), citronella (1 cab 31 manz), lemongrass, bananas (3 cab 22 manz), sugar (62 manz) and corn (1 cab 32 manz). "Appeal to Consejo Agrario Nacional: Denuncia de Tierras de la Finca 'Las Delicias'," Las Delicias, Las Delicias, Exp. 3. Paq 5, Retalhuleu, DAN D900. AGCA.
[84] *Ley de Reforma Agraría.* Decreto 900. 1952, chapter 6.
[85] Las Delicias lost roughly one caballeria and El Porvenir lost abour 3 caballerias. Las Delicias, Exp. 3. Paq 5, Retalhuleu, DAN D900. AGCA.

was too small to share between the 325 petitioners.[86] Resident workers protested that *El Porvenir* was undeveloped, suggesting that even long-time residents were taken by surprise by the speed and extent of Chessmann's development work. Anger about the perceived injustice of the expropriation process boiled over, and *Las Delicias*' owner claimed that campesinos began occupying exempt parts of the farm early in 1954.

Figure 12: Finca El Porvenir (1947)

[86] They distinguished between "campesinos libres" (150), "mozos colonos" (125), and "arrendantes" (50) Las Delicias, Exp. 3. Paq 5, Retalhuleu, DAN D900. AGCA.

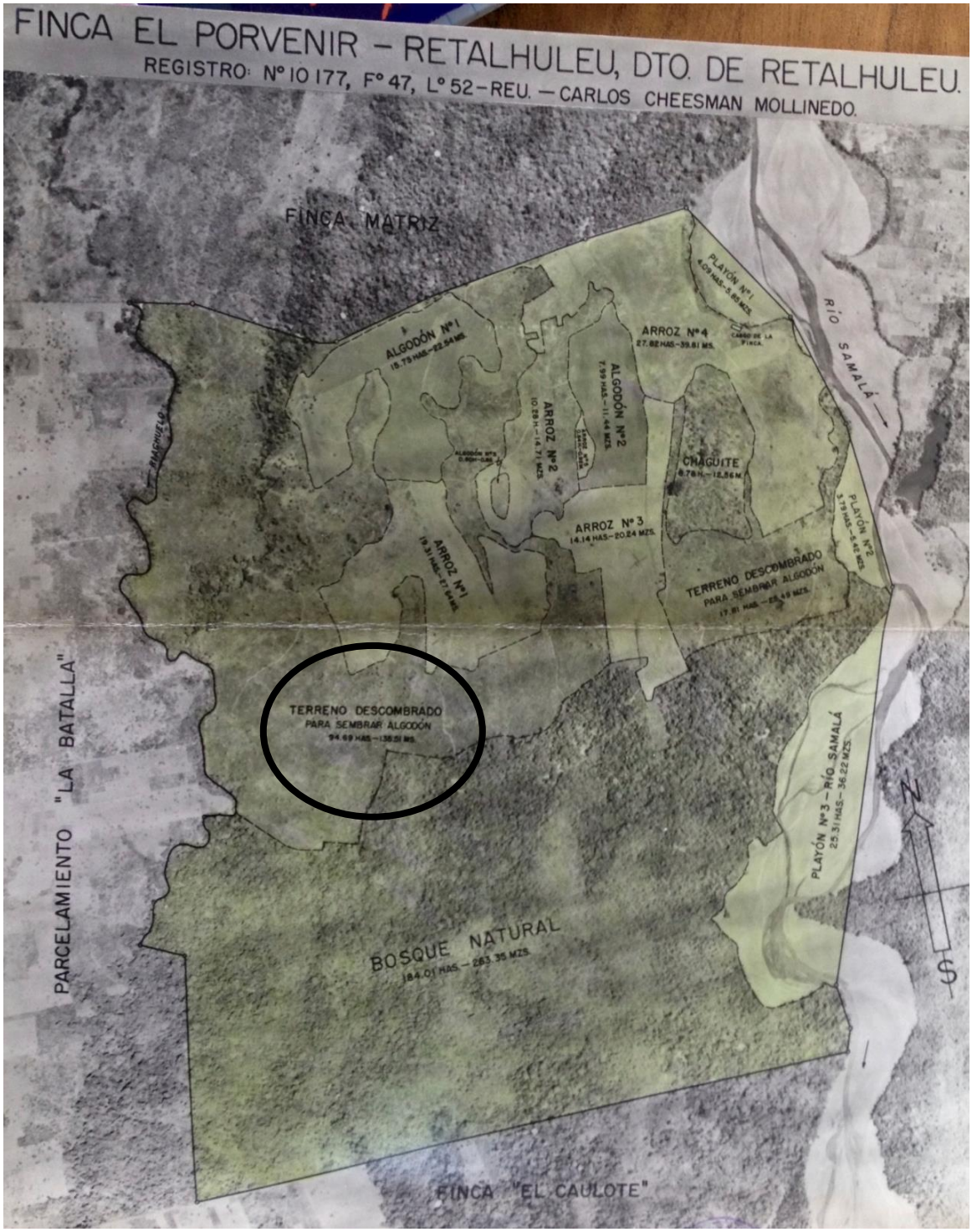

Figure 13: Finca El Porvenir (1954), land cleared for cotton (circled)

Landowners often juxtaposed their commitment to modern farming with the campesinos reliance on allegedly unsophisticated and extractive milpa cultivation. In Finca San Miguel, located in Retalhuleu's cotton zone, Carlos Macal Flores' farm saw a dramatic fluctuation in land use in just 4 years. The cattle rancher rented most of his land to *Industrial Schaenuffer Hermanos* in 1950 so that they could produce citronella and lemongrass that the company later refined into oils.[87] When the company collapsed in September 1952, the land reverted to Macal. He reported that over two-thirds of the farm was planted with oil crops, which replaced extensive pasturage. Although Macal insisted that he diligently maintained his field, in March 1953 he lost nearly 4 caballerias of citronella to fire. Macal later argued that campesinos burned the fields so they could plant corn, although there was no direct evidence to support this claim. More likely, Macal's conviction was fed by his simmering resentment toward campesinos who settled on his land shortly after the fire. The now unused land was subject to the Law of Forced Rental, and Macal had to rent 2000 cuerdas for corn cultivation. When the property was denounced late in 1953, almost all of this rented land—much of which still bore the marks of recent burning—was expropriated.[88]

Although campesinos only received formal property rights late in 1953, the Law of Forced Rental enabled them to occupy the same stretch of Finca San Miguel for over two years. Unlike many campesinos, they did not have to clear away forest or crops before planting; the fire that ravaged Macal's land left fields open, fertilized by ash, and primed for cultivation. These campesinos left few records, but the CAL for Retalhuleu reported in early 1954 that the majority of Macal's six caballerias was rented to third parties. Moreover, the CAL reported that Macal had had no crops on his own land and his pastures were in a state of complete abandon.[89] This juxtaposition is important because after the coup, Macal reclaimed his lost land by emphasizing his commitment to modern crops and rational land use. When the Government inspector arrived in October, 1955, he backed Macal's assertion that campesinos exhausted their land—planting "excessive" corn crops without crop rotations—forcing Macal to rehabilitate the rented fields with Chilean Nitrates. Macal's commitment to modern farming practices was reiterated

[87] The contract was cancelled because the company failed. "Letter to Comision Agraria Departamental from Carlos Flores Macal," November 23, 1953 San Miguel. Paq 1. Exp 1. Ind. DAN Decree 900 AGCA.
[88] "Letter to Comisión Agraria Departamental from Carlos Flores Macal," and "Report of Perito Agronomo, José Luis Granados Wittig," November 26, 1953, San Miguel. Paq 1. Exp 1. Ind. DAN Decree 900 AGCA.
[89] "Inspección Ocular, CAL de Retalhuleu," January 27, 1954. San Miguel. Paq 1. Exp 1. Ind. DAN Decree 900 AGCA.

throughout the inspector's report. He reported that the whole property was well-tended and planted with a mixture of cotton, lemongrass, citronella, and milpa for tenant farmers and tractor drivers. Macal had refocused production on cotton, which represented over half of the acreage under production and was supported with state-of-the-art machinery.[90]

Although planters emphasized the importance of soil and forest conservation, they did so because this mirrored the Revolutionary government's rhetoric and thereby limited their exposure to expropriation. In practice, landowners' defined conservation very narrowly as deriving immediate financial benefits from resource extraction and farm improvements. Hence, many of the reports about campesino deforestation emphasized the peasantry's failure to sell high quality lumber. Elite definitions of conservation generally did not focus on the long-term sustainability of extraction, especially as landowners rapidly increased production to fend off expropriation claims. This was evident in the case of Tulula, a huge industrial enterprise that covered 125 caballerias before the Bouscayrol family divided it in May, 1952. The new property was called Finca Buenos Aires, and the family maintained it was a distinct farm operated by the seven Bouscayrol brothers. The DAN inspector rejected this claim when he saw cattle travelling freely between both farms.[91] Even if there was no real difference between owners, the agro-ecological conditions on the farms influenced the Bouscayrol's approach to development.

The Bouscayrol brothers managed the newly formed Buenos Aires farm collectively. Unlike Tulula proper, the newly created farm was essentially undeveloped, blanketed by forests and a limited amount of pasture land. However, the brothers tried to use this to their advantage by emphasizing their concern for conservation and reforestation. They claimed that their father had protected the forest since the turn of century and there was no comparable stand of virgin forest anywhere on the Pacific Coast.[92] After they received the land, the brothers began aggressively extracting lumber: fine lumber like mahogany and cedar was sent to urban markets and lesser wood was used for construction, railroad ties and fuel for campesinos and Tulula's sugar refinery (Figure 14). They signed a contract with Ferrocarriles Internacionales of C.A. to

[90] Rodolfo Johannessen was overseeing Macal's cotton operations. Macal had purchased the best machinery, including a liquid fumigation unit which the inspector claimed was the first of its kind in Guatemala. "Inspeccion Ocular de Haciencda San Miguel," October 13, 1955, San Miguel. Paq 1. Exp 1. Ind. DAN Decree 900 AGCA.
[91] "José Luis Bouscayrol to President Arbenz," October 26, 1953; "Marco Antonio Blanco Mendoza Report to Inspector General, DANs," November 3, 1953, Tulula, Exp. 9. Paq. 3, Reu. DAN Decree 900. AGCA. Guatemala.
[92] "Exposición Del Gerente de Bouscayrol Hermanos Sobre el Movimiento de Madera en Nuestra Propiedad 'Finca Buenos Aires," October 15, 1953, Tulula, Exp. 9. Paq. 3, Reu. DAN Decree 900. AGCA. Guatemala.

supply them with 55,000 railroad ties. Moreover, they pledged that they would redouble their efforts to extract lumber in 1954, reaching 3 million feet of lumber.[93] This new pressure on Buenos Aires' forests reshaped the landscape (Figure 15). By 1954, roughly nine caballerias of the farm were rented by three men who sublet the property to 380 campesinos who paid 5% of their annual crop in rent (Figure 16). Most of this land was forested in 1953.[94] The Bouscayrol's extraction of lumber helped them reduce the land expropriated from 42 caballerias—the entire forested area of the farm—to 11 caballerias.

Figure 14: Buenos Aires, Forestry

[93] Ibid.
[94] "Inspección Ocular Agraria: Dirección General de Asuntos Agrarios," May 2, 1956, Tulula Exp. 9. Paq. 3, Ind. DAN Decree 900. AGCA. Guatemala.

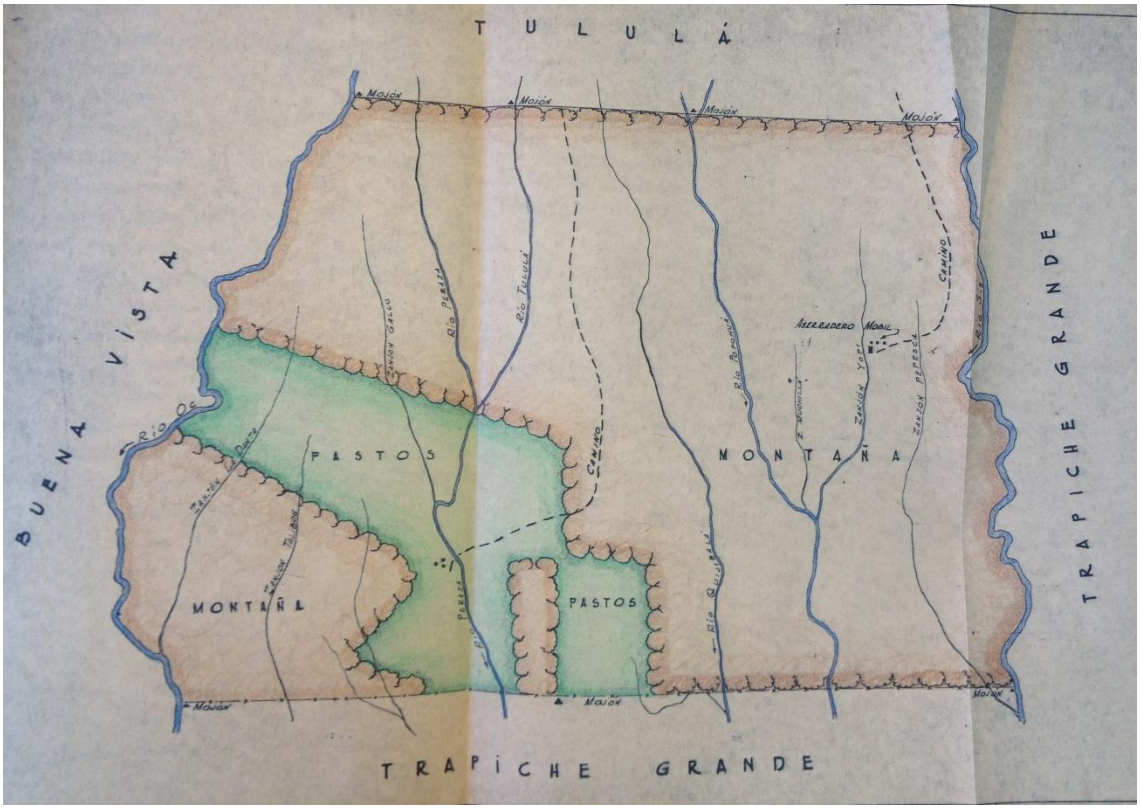

Figure 15: Buenos Aires (1953), land use divided between pastures and forests

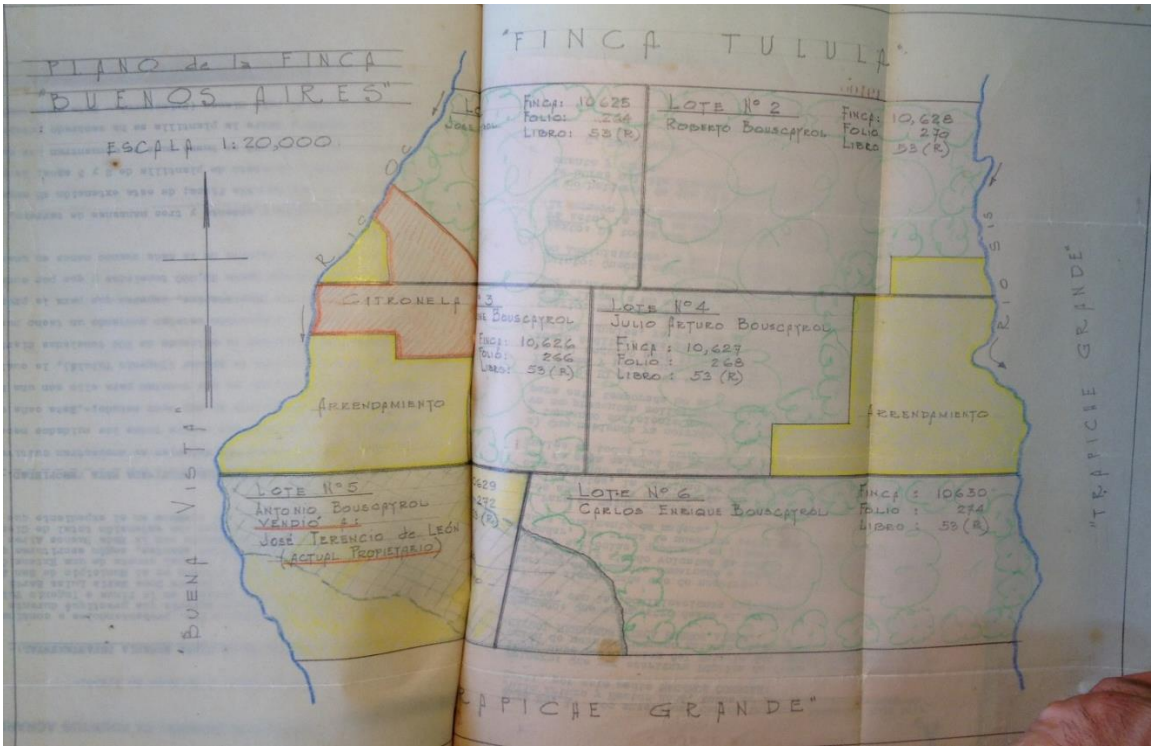

Figure 16: Buenos Aires, increased land use after the coup

At the time of the split that created Buenos Aires, Tulula was an industrial-scale operation with a sugar cane refinery, an airstrip, and a diversified collection of crops including sugar cane, cotton, rice, corn, coffee and rubber. The Bouscayrol's tried to limit Tulula's exposure to expropriation by increasing sugar, rice, and cotton production and stocking the pastures with more cattle. They insisted that the sugar refinery needed at least eight caballerias of forested land for fuel.[95] Like many farms on Pacific Coast, the Bouscayrol's used cotton to turn underutilized pasture—liable to expropriation—into cropland. Like Arbenz, the Bouscayrol's soon discovered that cotton did not thrive on the Pacific Coast without significant technical interventions. Cotton production grew from 150 to 260 manzanas in 1953, even though the crop suffered two large pest outbreaks in 1952 (Figure 18). Though they eradicated the first outbreak, the second arrived as the plants were bearing bolls and the plantation suffered significant losses because they ran out of pesticides.[96] By 1956, the farm had cut back its cotton fields to roughly 130 manzanas and was refocusing production on citronella.[97] In the interim, the Bouscayrol's intensification persuaded Arbenz to reduce the final expropriation from 23 to 17 caballerias. Though they insisted on their commitment to conservation, the combination of intensive export agriculture, railroad construction and lumbering cleared forest faster than it could be replanted. Combined with ranching, this caused rapid soil degradation and erosion in a tropical climate like Guatemala.[98]

[95] "Report Perito Agricola Oliverio Soto S," January 26, 1953, Tulula Exp. 9. Paq. 3, Ind. DAN Decree 900. AGCA.
[96] Rice was abandoned by 1956. A specific breakdown was not available for 1953, but in 1952 they grew roughly 3 times as much cotton as rice: 150 manzanas of cotton to 1 caballeria of rice. (Img 7082) "Appeal to President: Recurso de Alzada en la denuncia agraria de la finca Tululá, Jose Luis Bouscayrol" October 27, 1953, May 2, 1956, Tulula Exp. 9. Paq. 3, Ind. DAN Decree 900. AGCA.
[97] This succession pattern mimicked that on Arbenz's finca, although the reasons for the shift are not clear.
[98] After the coup, the Guatemalan government consulted Cuban forestry experts for advice about how to restore damaged woodlands with quality lumber. "La Dasonomia en el Area de Demostracion," Min. Ag 421. AGCA. For deforestation in Cuba, see Reinaldo Funes, *From Rainforest to Cane Field in Cuba*: *An Environmental History since 1492* (Chapel Hill: University of North Carolina, 2008). For the interaction between cattle, deforestation, and soil erosion in the tropics see Sterling Evans, *The Green Republic: A Conservation History of Costa Rica* (Austin: University of Texas, 1999), 38-41.

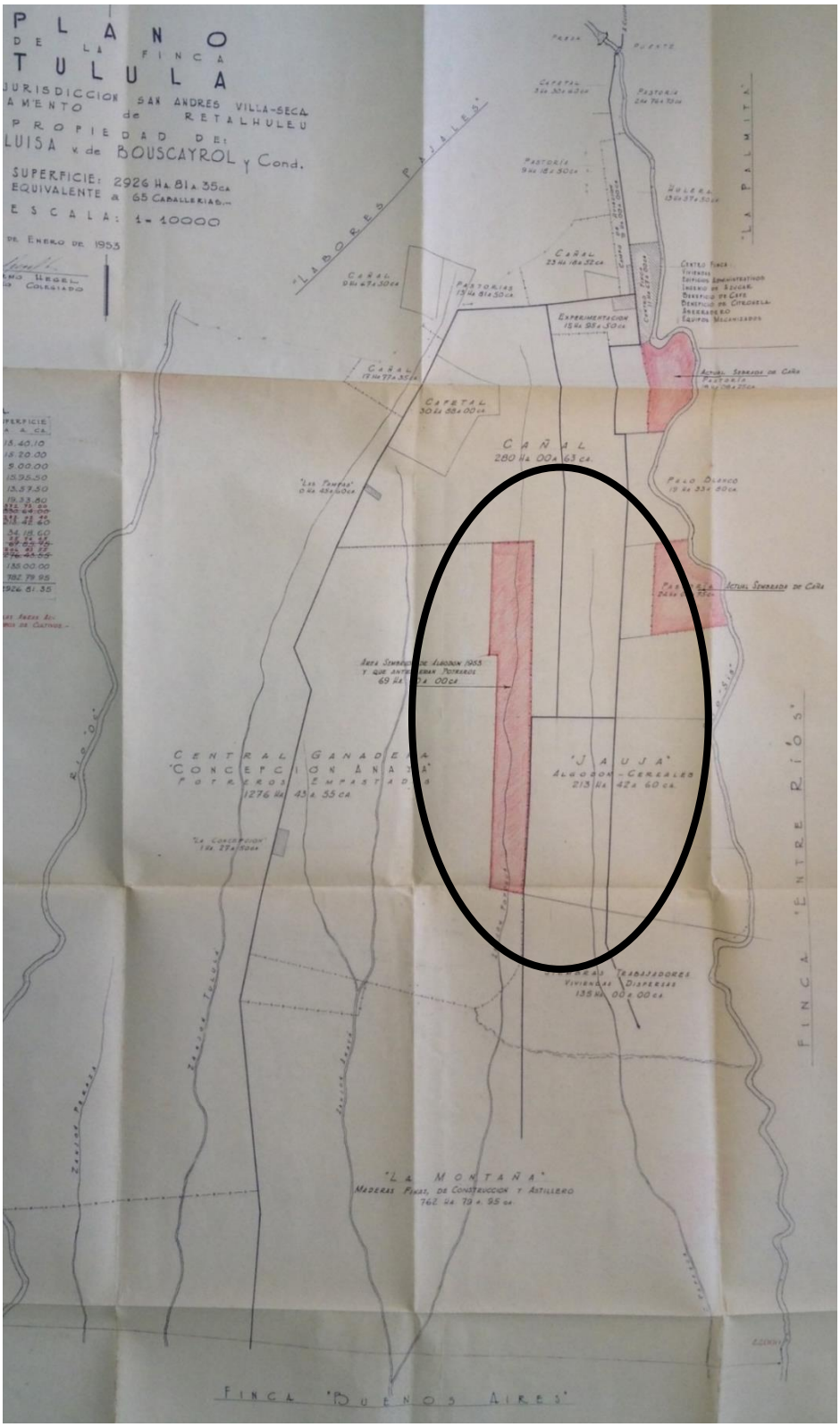

Figure 17: Finca Tulula, new land in cotton as of 1953 (Circled)

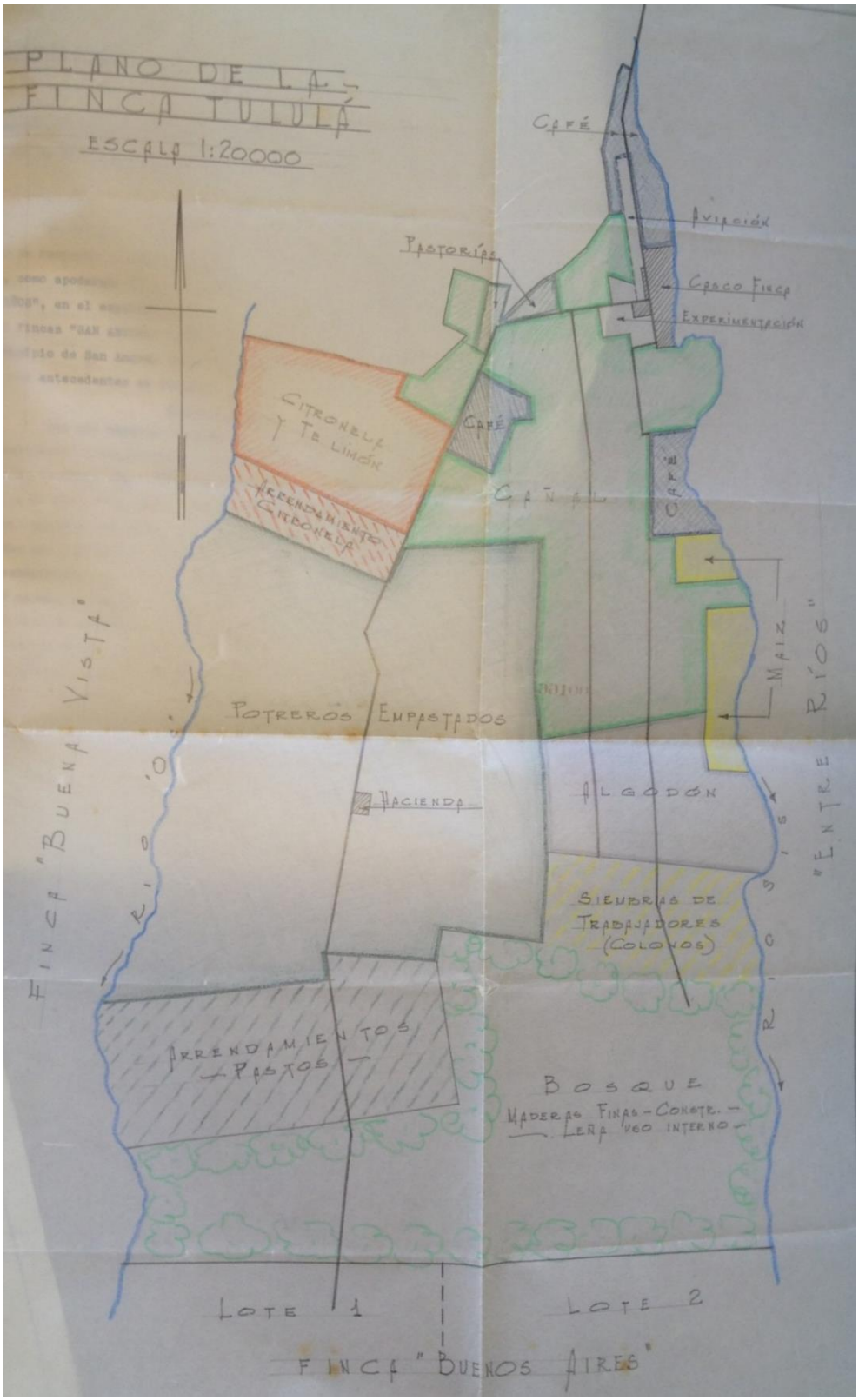

Figure 18: Finca Tulula after 1954, cotton land put back into pasture

The Bouscayrol's legal maneuvers successfully delayed expropriation, but petitioners finally received over 28 caballerias late in 1953. Even after their long-awaited legal victory, various unidentified "enemies" who supported the Bouscayrol's prevented beneficiaries from settling on their new parcels. They appealed to the DAN in June 1954, threatening that unless the government stepped in they would "make our justice according to Decree 900."[99] With the coup days away, no action came and the campesinos never received their land. When the case of Tulula was reviewed by the Castillo Armas government after the coup, the Dirección General de Asuntos Agrarios (DGAA) found in favor of the original campesinos, approving the expropriation of three caballerias from Tulula and five and a half caballerias from Buenos Aires. However the expropriations—which were fairly rare—were just 5 manzanas. This was below the 15 manzanas awarded to campesinos through Decree 900 and it signified the Castillo Armas' government's efforts to capitalize on the symbolism of land reform without challenging structural inequalities that created endemic rural poverty.

The case of Tulula demonstrated the unintended side-effects of the agrarian reform: savvy planters used their political, legal and economic power to prevent expropriation by expanding production. Under Decree 900, landowners who produced items vital for the national economy like cotton, citronella, and cattle could claim protection from expropriation. This policy stimulated crop diversification and modernization, but it also encouraged large landowners to rapidly clear new land without careful planning. Cotton production rose rapidly throughout this period, but in many cases—like El Cajón and Tulula—land that was first planted in cotton was often quickly transitioned to alternative crops or pastureland because of concerns about pests (Figure20). Cotton's allure was as a transitory crop that enabled planters to rapidly deforest, colonize, and monetize new land. Between the agricultural censuses of 1950 and 1964, the amount of forested land fell by half or more across the Pacific Coast. In Escuintla, the 1950 census reported that nearly 310,000 manzanas was forested but the 1964 census recorded only 100,000 manzanas as forested. This pattern was repeated in Suchitepéquez and Retalhuleu. A large percentage of this newly opened land was used for semi-permanent tree crops like bananas and coffee (Figure 19). However, there was also a growth in cultivated pastures—a category that

[99] "Letter to Jefe Departamento Agrario Nacional, Guatemala from Beneficiaries D900, Tulula" June 11, 1954 Tulula Exp. 9. Paq. 3, Ind. DAN Decree 900. AGCA.

did not exist in 1950—that highlights the effectiveness of Revolutionary-era cattle regulations and the intimate connection between cattle and cotton.[100]

1950	Escuintla	Suchitepéquez	Retalhuleu
Farms	10 662	12 735	8943
Crops	183 602	81 817	52 125
Fallowed Land	20 445	13 089	16 553
Semi-Permanent Crops	13 905	37 182	10 370
Permanent, Planted Pasture	*	*	*
Temporary Pastures	*	*	*
Natural Pasture	75 325	44 151	42 052
Forest and Bushland	309 044	57 717	56 926
Other	47 267	20 154	14 943
Total	649 588	254 110	192 969

1964	Escuintla	Suchitepéquez	Retalhuleu
Farms	17 189	15 367	10 545
Crops	126 221	33 293	57 495
Fallowed Land	37 752	13 199	13 373
Semi-Permanent Crops	69 312	72 534	23 931
Permanent, Planted Pasture	215 671	79 454	60 309
Temporary Pastures	6 965	3 494	2 225
Natural Pasture	44 424	13 778	7 848
Forest and Bushland	100 388	26 871	20 682
Other	29 969	10 140	12 447
Total	630 702	252 763	198 310

Figure 19: Land use compared between 1950 and 1964, measured in manzanas[101]

[100] Robert Williams argued that the transition to cattle on the Pacific Coast "preserved the economic logic of cotton, but not cotton's appetite for a large labor force." Robert Williams, *Export Agriculture and the Crisis in Central America*, 45, 67.

[101] Note that the totals are larger than combined categories, indicating that roads, rivers and other infrastructure or geographic features were omitted. Land unsuited to agriculture was in the other category. Crop category includes crop failures, to indicate intended use of land. Permanent pasture and temporary pastures were not recorded in the 1950 census. "Cuadro 16: Uso de la Tierra," *Censo Agropecuario, 1950* vol. 1 (1950); "Cuadro 7, 7-1, 7-2: Número de fincas y superficie según uso de la tierra. República por tamaño," *II Censo Agropecuario, 1964.* Vol. 2 (1964).

Departments	1953-54	1954-55	1955-56	1956-57	1957-58
Escuintla	10 540	16 234	24 226	15 518	20 387
Retalhuleu	2 110	2 700	2 872	1 560	2 540
Suchitepéquez	573	1 601	1330	830	1 010
Santa Rosa	329	508	948	6	323
El Progreso	160	282	370	265	0
Zacapa	610	876	70	0	0
Chiquimula	10	12	103	140	45
Others	169	20	65	0	600
Small Growers	804	*	*	*	*

Figure 20: Area planted in cotton by Department, measured in manzanas.[102]

Conclusion

Arbenz and his followers believed that the state needed to restructure land tenure in order to create the social and economic conditions for equitable development and economic growth in Guatemala. The Agrarian Reform Law distributed land to nearly 100,000 families and beneficiaries were supported with hybridized seeds, fertilizers, and credits. Over two years, campesinos and technicians laboured together to bring new land into production. The Arbenz government worked diligently to support beneficiaries but the scale and speed of the agrarian reform overwhelmed the state's limited resources. Campesinos frequently pushed the state to fulfil its commitments to support beneficiaries, sending letters directly to the Minister of Agriculture. Though their requests bypassed the National Agrarian Department, they were almost always quickly fulfilled by bureaucrats who believed earnestly in the reform. To ensure prompt resolution, campesinos also carefully framed their requests in the language of conservation and organized through the National Peasant Confederation of Guatemala (CNCG). Working through the agrarian reform together created opportunities for experts and campesinos to break down seemingly immutable ethnic and class differences. Decree 900 demonstrated that an agrarian reform could redress the food production problems that had plagued Guatemala for decades by engaging campesinos and giving them access to good farmland.

Large landowners benefitted tremendously from both the agrarian reform and its rapid reversal in 1954. During the reform, landowners aggressively expanded the land under

[102] Adapted from "Superficie de Algodon Cultivada por Departamentos en los Ultimos 5 Años," *Informativo Algodonero*, no. 6 (1957): 8.

cultivation to avoid expropriation. This led to a surge in coastal deforestation that has not previously been recognized by historians. Newly cleared land was often planted with cotton, a lucrative and quick growing annual that was heavily supported by the Revolutionary government. INFOP offered generous loans to promote cotton cultivation and the Ministry of Agriculture encouraged modernization that allowed farmers to access the pesticides and tractors they needed to clear and plant new land. Harnessing mechanization, hybridized seeds, fertilizers, and pesticides, large landowners on the Pacific Coast produced record-breaking yields on newly opened land.

Though they benefited from modernization initiatives, most Guatemalan elites did not share Arbenz's belief that improving the peasantry's quality of life would bring collective prosperity. They saw the agrarian reform as a challenge to their power because it undermined the competitive advantages of Guatemalan agriculture: cheap labour and abundant land. Where Arbenz and his followers saw a growing web of small producers becoming citizens, landowners saw nightmarish invaders ready to revenge themselves on the elite that had exploited them for generations. The coup that reversed the agrarian reform helped large landowners to assert unprecedented control over labour and land. They reclaimed expropriated land from campesinos, complaining that agrarian reform beneficiaries deforested protected land. However, landowners quickly developed this land after it was returned. They replaced small corn fields with exports like cotton that created rapid wealth but caused significant food production problems. The coup enabled large landowners to suppress activists so that they could create an agrarian landscape that was very productive and highly unequal.

Chapter 6: "An Anchor of Sweat and Blood"

> The strength of Guatemala is in the earth, which is her support. When the country interrupts the multi-millennial alliance of the peasant and the land, we are at the mercy of any eventuality…Man anchors himself, then, to the land as if it was an anchor of sweat and blood. With her he remains faithful, like the biblical Sower.
>
> *Tierra* (1959)[1]

The success of the agrarian reform alarmed Guatemalan elites, who feared the empowerment of Guatemala's long oppressed indigenous population. For centuries, landowners depended on the cheap, skilled labour of Guatemala's indigenous campesinos to pick coffee, cut cane and collect bananas. Their labour was an essential part of Guatemala's vaunted fertility.[2] By giving campesinos enough land to live well on, the agrarian reform threatened to increase labour costs and reduce the profitability of export agriculture. It also upset an established social and racial hierarchy that benefitted Guatemala's elite, tapping into long-held fears about an indigenous uprising.[3] In June of 1954, the US covertly assisted Castillo Armas and his ragtag band of soldiers when they invaded Guatemala in June of 1954.[4] Conservatives cited the Arbenz government's expropriation of private property—including large swathes of UFCo land—and the perceived power of communists in his administration to justify the coup. Guatemalan elites and their US allies justified the coup as an effort to strengthen democracy in Guatemala, but it

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[1] "Cosecha de Ciudaños Libres: Importante Jira del Director de Asuntos Agrarios, Coronel Enrique Peralta Azurdia: En Las Zonas de Desarrollo Agrario Florece un Hombre Nuevo," *Tierra* 1, No. 3 (1959): 2.

[2] Jim Handy, "'A Sea of Indians": Ethnic Conflict and the Guatemalan Revolution, 1944-1952." *The Americas* 46, no. 2 (1989): 190-192, 199, 204. Severo Martinez-Paleaz, *La Patria del Criollo: An Interpretation of Colonial Guatemala*, 81;

[3] For an exploration of ethnicity and power see Greg Grandin, *The Blood of Guatemala* (Durham and London: Duke University Press, 2000). For the fear of Indigenous rebellion and its influence on Spanish colonial policy, see Sinclair Thomson, *We Alone Will Rule: Native Andean Politics in the Age of Insurgency* (Madison: University of Wisconsin Press, 2002). For efforts to contain Indigenous peoples in an age of liberalism see Brooke Larsen, *The Trials of Nation Making: Liberalism, Race, and Ethnicity in the Andes*, 1810-1910 (Cambridge: Cambridge University Press, 2004). Finally, for recent historical context feeding elite fears of Indigenous rebellion, see discussion of 1932 massacre in El Salvador, Jeffrey L. Gould and Aldo A. Lauria-Santiago, *To Rise in Darkness: Revolution, Repression, and Memory in El Salvador, 1920-1932* (Durham: Duke University, 2008).

[4] For the CIA rationale behind the coup and the emphasis on ending the Agrarian Reform see Nick Cullather, *Secret History: The CIA's Classified Account of its Operations in Guatemala*, 1952-1954, 2nd edition (Stanford University Press: Stanford, California, 2006), 60-62. Other key works include Pierro Glejesis, *Shattered Hope: The Guatemalan Revolution and the United States*, 1944-1954, (Princeton, New Jersey: Princeton University Press, 1991); Richard Immerman, *The CIA in Guatemala: The Foreign Policy of Intervention* (Asutin: University of Texas Press, 1982); Stephen C. Schlesinger and Stephen Kinzer, *Bitter Fruit: The Story of the American Coup in Guatemala* (Cambridge, Mass: Harvard University, David Rockefeller Center for Latin American Studies, 2005).

enabled powerful landowners to reclaim their lost land and persecute labourers and campesinos who tried to improve their lives.

The violent reversal of Decree 900 created a landscape dominated by private capital, where the rural poor had fewer labour rights, less access to land, and struggled to afford food. Landowners and the UFCo persecuted campesinos, workers and labour organizers under the pretext that they were purging communists. [5] A witness in Alta Verapaz recalled the overthrow of Arbenz as a dramatic transition between an age of liberty and oppression.

> When Arbenz died [referring to the coup] the Mayor called on us and told us that now we won't be working like before, that they don't listen to anybody. Here ended our work in the committees and we began our work on the haciendas.[6]

This campaign was especially vicious on the Pacific Coast, where landowners wanted retribution against organized labour and campesino 'invaders.'[7] Although it was poorly documented, roughly a thousand campesinos and workers were killed in at Finca Jocotán in Tiquisate. Forster notes, "networks of popular organizing were slashed to the root in Escuintla."[8] Terrified by the prospect of persecution many campesinos fled before the land claim adjudication process even started. One witness from Escuintla recalled his harrowing escape from Finca Caobanal shortly after the coup. He and his family left their land immediately after they learned about orders to torch the houses of Arbenz supporters, burning anything or anyone inside.[9] Campesinos across the country abandoned their crops to save their lives, this resulted in large crop losses and caused widespread food shortages and speculation for several years after the coup. Manuel Galich, a member of the Revolutionary government, later described the "revanchist fury" of large landowners as a "catastrophe" for campesinos who lost their crops, land and often lives during

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[5] Forster, *The Time of Freedom*, 197-213. For the anti-communist campaign and purges of the civil service and union, see Streeter, *Managing the Counterrevolution*, 37-41.

[6] Comisión para el Esclarecimiento Histórico, *Guatemala: Memoria del Silencio*, vol. 1 (Guatemala, 1999), 110.

[7] The periodical *Tiquisate* celebrated the 2nd anniversary of the Liberation government with an issue dedicated to the seventeen local men killed by Arbenz supporters. They claimed the Revolutionary government sanctioned torture and assasinations, likely a reference to land invasions that Arbenz struggled unsuccessfully to control. The invasions were driven by campesino frustration that the agrarian reform was proceeding too slowly. For more on the land invasions see Handy, *Revolution in the Countryside*, 105-106. "Tiquisate en el II Aniversario de la Liberación: El Porque de Esta Revista," *Tiquisate*, no. 1. (1956): 1.

[8] Forster, *The Time of Freedom*, 202-204; Handy, *Revolution in the Countryside*, 194; Ricardo Falla, *Masacres de la Selva, Ixcán, Guatemala (1975-1982)* (Guatemala City: Editorial Universitaria, 1992), interview 61.

[9] Comisión para el Esclarecimiento Histórico, *Guatemala: Memoria del Silencio*, vol. 1 (Guatemala, 1999), 110.

the counter-reform.[10] For most Guatemalans, 1954 marked a retreat from activism and a return to penury and peonage in a nation dominated by unfettered private capital.

The military regimes that ruled Guatemala after 1954 used a combination of state violence, generous public financing, and international aid to transform Guatemala into a highly productive and radically unequal agro-exporter. Large landowners reclaimed their lost land and—using techniques and technologies introduced during the revolution—planted lucrative exports like cotton on land cleared by campesinos. In this atmosphere of violence and intimidation, the rights of workers and environment protections were pleasant fictions with little substance. However, President Castillo Armas and his successor, Miguel Ydígoras Fuentes, could not entirely ignore the Revolution because the social and economic policies introduced during this period demonstrably improved the lives of most Guatemalans. Instead, they tried to capture and deploy the rhetoric of the agrarian reform to stem social unrest caused by repression and escalating food prices after the coup. The government promoted carefully controlled Agrarian Development Zones as ideal models for coastal colonization and agrarian reform. These planned agrarian colonies resettled an insignificant fraction of Guatemala's campesino population.

The *Liberación* government used the majority of the international loans and aid funds they received to develop a road infrastructure that facilitated the export of crops from Guatemala's Pacific Coast. They also offered cotton growers generous loans to stimulate the rapid expansion of this industry across the Pacific Coast. This focus on infrastructure buried the state in debts but it did little to improve the lives of campesinos, who struggled under the burden of hunger, political repression and growing environmental problems including pesticide exposure. Castillo Armas and Ydígoras Fuentes spoke in the discourse of agrarian modernization—improving productivity with new technologies—but their policies only deepened structural inequalities. Without regulations to conserve natural resources or support campesinos and workers, agrarian modernization created increased yields at the expense of the poor and the environment.

[10] Forster notes that in San Marcos, the few campesinos who defended their land claims did so carefully, emphasizing need over rights or class. Forster, *The Time of Freedom*, 205, 207; Manuel Galich, "Diez años de Primavera (1944-54) en el País de la Eterna Tiranía (1838-1974)," *Revista Alero*, No. 8, (1974), 57.

"Ghostly Army of Hunger"

The self-styled *Liberación* government argued that Decree 900 failed because it restricted the large landowners whose plantations generated economic benefits for the entire country. A military junta, led by Castillo Armas and Colonel Elfego Monzón, reversed the agrarian reform with Decree 31. This new law that established a legal process for the state to review all of the expropriations. To maintain a veneer of legitimacy, they required the original owners to prove that their land had been expropriated illegally. In a small percentage of cases, the Dirección General de Asuntos Agrarios (DGAA)—the body that re-evaluated Decree 900 cases—endorsed expropriation. However, the amount of land redistributed to campesinos was almost always significantly less than under Decree 900.[11] There were also provisions that allowed campesinos to collect their harvests before they were resettled on land that suitable for small-scale production, but many fled fearing repression by the state and aggrieved landowners.[12] Through Decree 31, landowners successfully reclaimed more than 80% of the 765,233 manzanas expropriated by the Arbenz government.[13]

Though government functionaries often manipulated the appeals process to ensure that landowners were able to reclaim their property, the Revolutionary government successfully established the productivity benefits of agrarian modernization.[14] To secure the return of their land under Decree 31, landowners had to present a detailed plan that demonstrated how they

[11] Cases when land was returned were rare and often accompanied by unique circumstances. Decree 900 beneficiaries at El Barretal in Palin claimed that their land had been taken decades ago by the dictator Jorge Ubico. They also complained that anti-communists who were actively intimidating campesinos. To limit further agitation, the DGAA distributed 61 manzanas to be shared between 33 families. This was less than the 4 caballerias and 53 manzanas awarded by the Consejo Agrario Nacional (CAN), and the resulting 1.8 manzana plots fell below the government's own norms for appropriate farm size. "Letter to Head of DAN, Alfonzo Martínez from Union Campesina de San Vicente Pacaya,"December, 12, 1952. El Barretal. Exp. 10. Paq 1. Ind 14 Decree 900. AGCA. Guatemala. "Letter to Director DGAA from Dadislao Revolorio y Compañeros," April 26, 1955. For another example of a protracted land conflict where an indigenous community used activism and legal means to seek restitution of stolen land generational struggled to reacquire land see also Irmalicia Velásquez Nimatuj, "'A Dignified Community Where We Can Live': Violence, Law, and Debt in Nueva Cajolá's Struggle for Land," 173-174.

[12] Handy, *Revolution in the Countryside*, 194-195.

[13] 603,775 manzanas were returned. The DGAA noted in 1956 that roughly 0.4% of beneficiaries were still on their original land, though this number may have been higher in practice. Handy, 197, fn.17.

[14] Even where a sound legal reason did not exist for returning the land, officials used "imaginative justification[s]" to justify their decisions. One common reason given was absence of beneficiaries on the land, but the Liberation government's agrarian decrees had no rules requiring tenancy. Alternatively, they were required to prove they had not invaded the property in question, which was a difficult proposition because DAN records contain relatively few details about D900 beneficiaries. Handy, *Revolution in the Countryside*, 197, 199.

would modernize production on their plantation once the land was returned.[15] Agronomists travelled to the plantations to assess the viability of modernization plans and describe how Decree 900 beneficiaries had used the land. These reports were laden with precise scientific observations about the quality of the land, but their main purpose was to justify the reversal of the Agrarian Reform Law. Landowners often claimed that campesinos had wasted the productive potential of their land, clearing land indiscriminately and planting it with milpa. Inspectors found evidence for this in the destruction of forests and the exhaustion of soils allegedly caused by over-cropping corn. As a whole, their reports created a consistent narrative: productive, orderly industrialists suffered at the hands of wasteful, chaotic campesinos.

For example, the DGAA's inspection of Finca Santo Domingo in Escuintla reported that campesinos disobeyed the DAN's expropriation orders and settled instead on prime pasture. The inspector criticized beneficiaries for wasting land, using 2 caballerias of an 8 caballeria area that they occupied. In some cases, they alleged that campesinos planted only 3 to 4 cuerdas[16] on a full caballeria and erected no fences to protect their crops from livestock. They concluded that many beneficiaries failed to clean up their fields after harvest, and others simply abandoned them in the initial stages of planting. The unruly expropriation coincided with multiple land invasions that prevented the owner from accessing river water. As a result, she had to sell off cattle and lost her small cotton crop due to lack of irrigation. Reports submitted by the DGAA's inspector and the landowner depicted a landscape impoverished by campesinos who failed to conserve valuable natural resources.[17]

Fundamentally, landowners rejected the Arbenz government's claim that the agrarian reform improved national production and they endeavored to prove how campesinos undermined Decree 900's goals. For example, Buena Vista's owner Manuel Batres rejected any notion that the Arbenz government sought to secure or improve cattle production for the public good. He told the DGAA that the government "did not try to develop the cattle industry only destroy it" in its efforts to destroy private capital.[18] His survey of the farm indicated that campesinos cleared

[15] Secretaría de Propaganda y Divulgación de la Junta Gobierno. Estatuto Agrario: Decreto 31. 1954, articles 5 and 6.
[16] A cuerda varied in size depending on location, but was roughly .3 acres.
[17] "Letter to Director of DGAA from Junta Agraria Departamental," Santo Domingo Exp. 5 Paq.1 Ind14. DAN Decree 900. AGCA.
[18] It is unclear if Ricardo and Manuel Batres were related, however, properties were often distributed between family members to lessen exposure to expropriation. "Manuel Batres to Junta Agraria Departamental, Escuintla," December 15, 1954, Buena Vista Exp. 4 Paq. 1 Ind. 14. DAN Decree 900. AGCA. Guatemala.

forested land in protected areas, where the inclination was over 30% or close to a watershed. The DGAA's Inspector condemned campesinos for clearing land with fire, because they wasted quality lumber and caused deforestation and soil erosion that damaged downstream pastures.[19] The inspectors failed to mention that the DAN had preserved the integrity of Manuel Batres' pastures by giving campesinos land in the forested section of the plantation.[20] The rocky topography of Guanagazapa, Escuintla made it difficult to find land suitable for cultivation. Even the agronomist who inspected the farm in May 1955, noted that the farm had suffered years of erosion and the best land for cultivation was interspersed throughout the forested tract. He also observed that Manuel Batres continued to plant to land cleared by campesinos, demonstrating the mismatch between landowner rhetoric and practice.[21] Although they sometimes criticized landowners, overall inspectors helped Guatemalan elites discredit rural development initiatives that empowered the rural poor.

Landowners benefitted from the agrarian reform's reversal, using the opportunity to modernize production on the plantation and remake labour relations. The case of *La Isla* in La Democracía, Escuintla demonstrates how angry landowners tried to punish campesinos by repealing customary privileges and lowering wages after the coup. Ricardo Batres' 18 caballeria ranch, *La Isla*, was denounced in 1953 and roughly 4 caballerias were expropriated by August of the same year. Batres launched an unsuccessful appeal, arguing that he was a progressive rancher who experimented with new production methods and cared for his workers, offering them free medical care and high wages. [22] After the coup, a vindictive Batres described the expropriation as an "invasion" of campesinos who settled on his land, cutting down protected trees and

[19] "Inspección Ocular de Revisión," April 5, 1955, Buena Vista Exp. 4 Paq. 1 Ind. 14. DAN Decree 900 AGCA.
[20] "Consejo Agraro Nacional, Guatemala," March 23, 1954 and "Acuerdo de Expropriation No. 901: Buena Vista," Buena Vista Exp. 4 Paq. 1 Ind. 14. DAN Decree 900. AGCA.
[21] "Inspección Ocular de Revisión," April 5, 1955. Buena Vista Exp. 4 Paq. 1 Ind. 14. DAN Decree 900. AGCA. Guatemala.
[22] The appeal was ill considered on Batres part, as the CAN decided to significantly increase the amount of land expropriated because the ranch did not meet the regional threshold of 55 head per caballeria. Despite Batres' claims that the farm was dedicated to raising cattle, campesinos reported the majority of La Isla's pasture land was dedicated to fattening imported cattle. President Arbenz subsequently revised this number to 4 caballerias, presumably an attempt to compromise with Batres. "Ricardo Batres S. to President Arbenz," August 26, 1953. La Isla Exp. 3 Paq. 1 Ind. 14 DAN Decree 900 AGCA. [22] The CAN raised the amount from 3 caballerias to 5 because the cattle to land ration in La Isla was far below the ideal of 55 head per caballeria. Batres argued unsuccessfully that the number of cattle on the ranch normally met the government threshold for rational land use, but he had sold 270 cattle in 1952 because of water shortages. President Arbenz subsequently revised this number to 4 caballerias, presumably an attempt to compromise with Batres. "Ricardo Batres to Comisión Agraria Departamental de Escuintla," June 1, 1953; "Declaración, Consejo Agrario Nacional," 11 August, 1953. La Isla Exp. 3 Paq. 1. Ind. 14 DAN Decree 900 AGCA.

introducing their cattle into his pastures.[23] Campesinos interviewed by the DGAA rejected this invasion narrative. They stated that Batres cooperated with state engineers who came to measure the land, and they received abandoned and unworked land that they cleared and planted with corn, rice and other crops at their own expense.[24] In August 1954, the municipal mayor for La Democracía threatened campesinos with eviction even though they had the right to remain at *La Isla* until their harvest was collected.[25] After a failed appeal to the Department's Governor, campesinos fled the farm fearing recrimination. When questioned about the location of the campesinos, Ricardo Batres' wife told the DGAA simply that the "invaders" left the farm in August before the official inspection.[26]

The bitterness generated by the agrarian reform process coupled with the repression and displacement of campesinos after the coup transformed rural labour relations. The owners of La Isla abandoned the pretext of a patron-client relationship that they had invoked just a year earlier. They requested, and received, legal permission to shift resident workers to new parts of the La Isla farm as they saw fit. They argued that their increased authority over land tenure allowed them to better manage the land by encouraging crop rotations, preventing campesinos from mindlessly exhausting soil fertility. This attack on campesino productivity ignored the advantages Batres and other landowners derived from their willing transformation of abandoned or forested land into cropland.

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[23] "Recurso de Revision Administrativa de la Hacienda 'La Isla,' July 13, 1954. La Isla. Exp. 3 Paq. 1 Ind. 14. DAN Decree 900 AGCA. Landowners often characterized legal expropriations as invasions, because they disagreed with the legality of the process. The majority of campesino-led invasions were not condoned by the government, although some groups were able to prolong their occupation by emphasizing the injustice of the finca's landowner or administrator. Forster, *The Time of Freedom,* 187-188; Handy, *Revolution in the Countryside*, 105-106

[24] Pedro Guicoy Hernandez was a single farmer from San Martin Jilotopeque, Chimaltenango who resided in Los Arcos Provincias. When he was interviewed by the DGAA in 1954, Guicoy noted that the lack of land at Los Arcos forced him to accept land at La Isla. Guicoy and others maintained that the land distributed to peasants was not prime pasture but rather swampy and abandoned. Another campesino, 50 year old Juan Mejia Gil, reported that he had tried to pursue all "licit" methods for supporting his family and had asked Batres directly for a piece of land that was never cultivated, but was refused. Guicoy received 15 manzanas of land from the state, but had only planted 2 manzanas with corn by July of 1954. Other campesinos reported planting more of their land: Juan Mejia Gil had a third of his 16 manzanas with rice and corn and Pablo Tuy was able to plant 8 of his 15 manzanas with milpa. "Testimony Pedro Guicoy Hernandez," "Testimony Juan Mejia Gil," 10 August, 1954. La Isla. Exp. 3 Paq. 1 Ind. 14. DAN Decree 900 AGCA.

[25] The eviction plan was brokered between Doctor Oscar Batres and two leaders of the Committee of Guachipilin who were being held in custody as "precommunist agitators." Their release would only be secured if they could convince campesinos to leave the plantation without conflict by the end of August. "Letter to Department Governor from Oullana Paiz, Juez Municipal," September 3, 1954. La Isla. Exp. 3 Paq. 1 Ind. 14. DAN Decree 900 AGCA. Guatemala.

[26] "Inspector Agrario, DGAA," June 4, 1956. La Isla. Exp. 3 Paq. 1 Ind. 14. DAN Decree 900 AGCA. Guatemala.

Elites argued that agrarian modernization—defined narrowly as the use of new agricultural technologies—could only be carried effectively by unfettered private capital. However, they frequently relied on the state to control labour and distribute aid to desperate campesinos. The reversal of Decree 900 displaced thousands of campesinos and created destabilizing food shortages throughout the country. This was worsened by a drought following the coup. Castillo Armas forestalled a potential famine by securing food aid from the United States. The *Liberación* government told Guatemalans and international donors that the 'communist' Arbenz government had left the country in shambles, weeks away from bankruptcy and on the verge of famine. In November 1956, Jorge Arenales, the Minister of Economy and Labour, told US allies that "hunger was in sight" in July 1954 "as a result of government meddling in the field of agriculture, food crops were left uncared for, and there was a critical shortage of corn and beans – the indispensable staples of the mass population."[27] US grant aid and shipments of corn helped the Guatemalan government stabilize the country immediately after the coup and avoid scarcity and speculation, at least temporarily.

In July 1955, the popular student newspaper *El Estudiante* reported that Guatemala was suffering a widespread and under-reported food crisis.[28] They argued that the coup unleashed "a politics of rancor and vengeance" among landowners who "systematically" destroyed campesinos crops with fire or fed them to animals, scant months before they could be harvested. *El Estudiante*'s editors criticized the Castillo Armas government for Guatemala's humiliating dependency on food aid.[29] Instead of enabling campesinos to produce their own food on Guatemala's fertile land, they argued that government food stalls perpetuated dependency and scarcity. Campesinos arrived in the middle of the night to claim their place, waiting in "interminable" lines to buy barely enough corn to last a day. These desperate Guatemalans constituted a "ghostly army of hunger."[30]

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[27] At its height, corn was 15 cents a pound and beans 23 cents. "Proposed Speech by Jorge Arenales in US," November 15, 1956," RG 59, Entry A1 5730 Box 2, folder: in "Guatemala – ICA – Grant Aid."

[28] The newspapers editors were vocal opponents of Castillo Armas, and in 1956 they choose to shut down shortly after their offices were raided by the government and they were interrogated. Heather Vrana, "'Our Ongoing Fight for Justice': The Pasts and Futures of Genocidio and Justicia in Guatemala," *Journal of Genocide Research*, Vol 18, No. 2-3 (2016): 249.

[29] In August of 1955, *El Estudiante* reported that beans became the newest item of speculation, after corn. Beans purchased in Mexico at Q8 were being sold in local markets at between Q20 and Q26 per quintal in local markets. They accused the government of collusion with key importers whose criminal speculation caused hunger. "Fiesta de Acaparadores," *El Estudiante*, August 18, 1955, 3.

[30] "Editorial: Hambre en el Pueblo," *El Estudiante*, July 28, 1955, 1, 4.

The Guatemalan government sold the corn provided by the US in local markets at discounted rates to generate local currency for development projects. The estimated revenue from the sale of corn in Guatemalan markets was $3.8 million (1955) and $2.3 million (1956).[31] This was a key stipulation of a larger US grant aid package to the Guatemalan government, but it exacerbated instabilities in Guatemala's food production system. Tying aid to the sale of cheap US corn harmed small producers trying to compete in local markets, and in 1956 Castillo Armas formally asked the US to halve its anticipated corn shipments from 50,000 to 25,000 tons citing local market saturation. John W. Fisher of the Office of Middle American Affairs also cautioned the Ambassador that International Cooperation Administration's (ICA) use of corn as source of aid revenue caused a "significant delay" in project funding, which had to wait on the shipment and sale of corn. The US modified its shipment to 30,000 tons of corn and completed this with alternate commodities, like wheat, but their attempts to manage Guatemalan grain prices masked local speculation and systemic instabilities in basic food production.[32]

After 1954, food production in Guatemala experienced an exaggerated yearly oscillation between scarcity and plenty. Campesinos living in the highlands harvested their corn in November and their crop lasted until May. Corn purchased from the market was often from the lowlands, which had two annual harvests. This cycle naturally created a hungry time between June and October, when supplies were scarce but demand was high. By late October of 1955, the government office controlling corn distribution reported a significant drop in demand for corn and declared an end to Guatemala's corn shortages.[33] However, field reports from across Guatemala warned that the recent shortages were going to be repeated in the coming year.[34] The Ministry of Agriculture speculated that the 1955-56 yields would be down by at least 85% from

[31] The Guatemalan Quetzal was pegged to the US dollar during this period.
[32] "Guatemala: Economic Development Assistance Program (Draft)" n/d; "Memorandum of Conversation: Guatemala, ICA Grant Aid Program," January 11, 1956.; "Letter to Edward J. Sparks, American Ambassador, Guatemala from John W. Fisher," January 1, 1956.; "Letter to Edward J. Sparks, American Ambassador, Guatemala from John W. Fisher," January 10, 1956. RG 59, Entry A1 5730 Box 2, ICA, folder: "1956 Guatemala ICA Grant Aid." NARA.
[33] "Letter to Jefe de la Oficina Controladora de la Distribución de Maíz del Estado from Carlos Porres Meza, Contralor" Guatemala, 28 Octubre, 1955. Guatemala. Min. Ag. 437. AGCA.; "Letter to Contralor Carlos Porres Meza from Min. Ag. Lazaro Chacon Pazos", 3 Noviembre, 1955. Guatemala. Min. Ag. 437. AGCA.
[34] Across the Verapaces corn shortages were predicted between March and June, depending on the region. For example. Santa Cruz Verapaz anticipated shortages in March because the extension planted was insufficient to meet demands. This was due, in part, to the region's focus on Maguey production. In Rabinal bean production was down and corn production was considered normal, but still insufficient to meet demand beyond June at which point imports would be needed. "Señor Jefe de la Oficina Controaldora de la Distribución de Maíz del Estado, Ingeniero don Rodolfo Perdomo M.," November 17, 1955. Min. Ag. 437. AGCA. Guatemala.

the previous year, citing late rains. This meant that demand in 1956 would exceed production by roughly a million quintales, resulting in further shortages.[35]

This cycle had long preoccupied the Guatemalan government and in the early 1950s INFOP took steps to bolster the country's silo infrastructure, so that domestic grain supplies could be stored and released in times of shortage to prevent inflation and speculation.[36] The collapse of coastal corn production after 1954 forced the state to acquire large shipments of corn from international donors. The influx of international corn created significant problems. Selling excess corn at market prices harmed local producers, but storing the corn was a serious infrastructure problem that the *Liberación* government was unprepared to handle. In September 1956, the Office for Controlling Corn Distribution advised that over 80% of Guatemala's corn reserve was at risk of spoilage unless it was immediately treated or sold at a discount. They concluded that only 20% of the national supply was stored appropriately, housed in INFOP's modern silos. The rest of the national reserve was at risk of humidity and pests and one of the warehouses was already infested with moth larvae.[37] Large landowners consolidated their control over land and labour after the coup, but for campesinos the *Liberación* revoked political liberties and saddled them with chronic hunger.

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[35] The production 1955-56 was projected. Consumption was estimated by tallying imports and production, minus exports. The report's author warned readers strenuously this was an estimate. The rapid growth and collapse of Decree 900 properties created a large margin of uncertainty about the actual amount of corn produced. This was compounded by government's historic inabilty to accurately measure household production. "Estimación del Faltante de Maíz que Habra Como Resultado de la Cosecha 1955/56" Min. Ag. Leg. 437. AGCA. Guatemala.

[36] *Monitor Del INFOP*, 2, no. 6: (1951). By 1958, INFOP had built new silos in Coatepeque, Retalhuleu, La Democracia, Chiquimulilla. By locating silos closer to production centers, they hoped to offer farmers better prices. Centralized storage hurt producers and consumers, since the cost of shipment to Guatemala City added significant costs. When INFOP bought corn at Q2.50, it had to selll that corn at Q3.50 to compensate for transportation costs. This still did not solve the production problem. INFOP told the US Agricultural Attache was boosting production through fertilizers and pest control remained a key government priority. "Memorandum of Conversation: Jorge Nanne, Manager of INFOP, John Scholl, Apricultural Attaché, American Embassy, Guatemala; Charles K. Ludewig, American Embassy, Guatemala," Rg 59, Entry # 5730, Box 4, 1958 Folder: "1958 – Guatemala – Agriculture." NARA.

[37] The spoilage problem was compounded by the fact that much of this corn arrived with impurities. Their plan was to transfer 1955 corn from INFOP silos to warehouses, since it was already treated. 1956 corn would be shipped to INFOP silos and treated immediately, to limit further spoilage. The state held an estimated 290,000 quintales. "Letter to Minister of State in the Office of Agriculture from Daniel de J. Rodriguez Juarez, Jefe de la Oficina Controladora de La Distribución de Maíz del Estado" September 21, 1956. Min. Ag. 437. AGCA. The health risks of corn spoilage are considerable. Modern studies have identified high levels on fungus and aflatoxins and mycotoxins on improperly dried and stored corn. See Martinez-Herrera's survey of maize sold in Guatemala's rural markets, which recorded the highest aflatoxin levels during the rainy season. M.L. Martínez-Herrera, *Efecto de ciertos hongos sobre valor nutritive, calidad y conservación del maíz en Guatemala*, Thesis, Universidad de San Carlos de Guatemala, 1968; Food and Agriculture Organization of the United Nations, *Maize in Human Nutrition*, Food & Agriculture Organization, (1992), 32.

Creating "Authentic Human Beings"

Though many aspects of the Revolution were overturned after 1954, progressives expanded public expectations about the responsibilities of the state. The legitimacy of the state depended on the ability of lawmakers to demonstrate sympathy for impoverished campesinos. In 1957, Castillo Armas insisted that the role of government was to facilitate the expansion of private capital by building roads and infrastructure. The President conceded, however, that the "new currents of social justice" introduced during the Revolution required the government to guarantee the social welfare of the masses. [38] The government initially used food aid supplied by the United States as a temporary panacea to prevent famine and quell rural discontent.[39] In 1956, Jorge Arenales, the Minister of Economy and Labour, argued that US relief allowed Guatemala to embrace progressive, democratic principles instead of "liquidating the communists…[and] instituting a hard-fisted rule based on rigid order."[40] However, this approach did little to inspire support for the *Liberación* among campesinos trying to feed their families. The Castillo Armas government recognized in 1956 that they had to engage in some form of land reform to assuage growing anxiety and unrest about the cost of food and the scarcity of land. The State Department cautioned that negligible increases in the living standards for rural and urban workers had already fostered "disillusionment in the Castillo Armas regime." If the government did not take immediate action, they were concerned that simmering resentment could explode into destabilizing violence.[41]

In 1956, the Castillo Armas regime tried to appropriate the language and symbolism of the agrarian reform with Decree 559. This law bore striking similarities to the original Agrarian

[38] Ministerio de Economia, *Political Economica del Gobierno de Liberacion: Reunion con los Sectores de la Iniciativa Privada*, July, 1957, 1.

[39] Castillo Armas supporters like the Partido De Trabajadores Democráticos tried to coordinate food relief with the assistance of the US, the UFCO and UNICEF because "empty stomachs feed on communism." They planned to feed the poor on powdered milk and rejected bananas, donated by UNICEF and the United Fruit Company. The US Ambassador wrote they "spoke with more eloquence than realism" about the possibility of "harmonizing relations between labor and capital in an effort to raise the standard of living and strengthen the economy so that President Castillo could continue his efforts to develop the country." "Memorandum of Conversation," March 5, 1955, RG 59, Entry A1 5730, Box 2. Folder: "Photos: 1956 – Guatemala – Political – Local." and "Memorandum: Del Gobierno de Guatemala que contiene algunas consideraciones políticas sobre la situación actual del país." RG 59, Entry A1 5730 Box 2, "Folder: 1956 Guatemala ICA Grant Aid" NARA; For Castillo Armas' philosophy of "New Life." See Handy, *Gift of the Devil*, 151.

[40] "Proposed Speech by Jorge Arenales in US," November 15, 1956," RG 59, Entry A1 5730 Box 2, folder: in "Guatemala – ICA – Grant Aid." NARA.

[41] "An Analysis of the Guatemalan Economy with Specific Reference to the U.S. Aid Program," RG 59, Entry A1 5730 Box 2 Folder: "1956 Guatemala – ICA." NARA.

Reform Law: it encouraged efficient land use by levying taxes on underutilized lands and created a legislative framework for expropriation of land for the "public good."[42] Yet where the Arbenz government believed that land was one part of a package of social and economic reforms, Castillo Armas and his successors used land reform as a symbolic tool to defuse criticism. Unlike the 1952 Agrarian Reform Law that empowered campesinos and encouraged them to organize, Decree 559 centralized the process of expropriation and the distribution of land to campesinos. The Dirección General de Asuntos Agrarios (DGAA) was the main arbiter of land redistribution and it focused its efforts on developing Agrarian Development Zones, areas of concerted investment where the state tried to engineer new agrarian colonies populated by market-oriented farmers. The resettlement of campesinos in planned agrarian communities was meant to bolster basic grain production and, more importantly, foster the growth of an agricultural middle class. Residents were carefully selected and educated through supervised credit programs, hygiene and education services. Families were encouraged to abandon their indigenous culture and adopt progressive, modern, and ladino values.

The emphasis on development over reform was a minor, but significant rhetorical shift that indicated the state's emphasis on technical oversight as the safeguard preventing popular appropriation of the reform process. Where Decree 900 facilitated the transfer of land to self-organized communities—brought closer during the process of denunciation—the Liberation government believed that young, devout campesino families would be the bedrock for its new agrarian development initiative. The 1956 Agrarian Statute stressed the importance of private landownership as the only means to incentivize campesinos to "care for the land, defend it, and make it productive."[43] Conservatives argued that Decree 900 suppressed individual initiative by forcing campesinos to accept land in usufruct and it undermined the stability of the community by diminishing the power of the Church. They defended Decree 559 as a more controlled and deliberate attempt at land reform, and they hoped that the campesinos who benefitted would place their faith in the state.[44] Decree 559 distributed land to individuals who were selected by

[42] See Article 60 for taxes, assessed based on land quality. "*Estatuto Agrario: Emitido por el Gobierno de la República*, Decreto 559 (Guatemala City: Imprenta Liberación, March 1, 1956); Handy, *Revolution in the Countryside*, 196.
[43] Secretaría de Propaganda y Divulgación de la Junta Gobierno. *Estatuto Agrario*. Decreto 559 (Guatemala City: Imprenta Liberación, March 1, 1956).
[44] "Tierra en Propiedad, Matriomonio que Dignifica al Hogar, Acercamiento de la Familia Social, y Mantenimiento de la Fe en Dios," *Revista Tiquisate*, No. 2. September 30, 1956.

the state and this unequal relationship between generous benefactor and poor recipient discouraged political agitation by campesinos. The government also could use Decree 559 to take land away from campesinos who violated laws protecting forests and rivers and "disobeyed technical instructions" meant to promote agricultural development.[45]

A review of Guatemala's agrarian development projects in 1957 emphasized the importance of drafting ladino families to settle frontier land on the Pacific Coast. Indigenous farmers were considered unprepared for the "modern techniques" being taught.[46] Since the colonies were supposed to create the nucleus for a new middle class and strengthen Guatemalan democracy, giving political and economic power to "primitive Indians" was dismissed as politically irresponsible.[47] Though planners rejected Indigenous settlers as unprepared for modernization, Guatemala's complicated racial dynamics rendered these attempts to discriminate difficult. The difference between ladino and indigenous was largely a geographic one, defined by the assumption that Guatemala's indigenous population lived in the highlands. Barring direct signs of indigenous culture like traditional clothing or the inability to speak Spanish, individuals could often represent themselves as ladino. Indeed, it was the fluidity in this ascription that encouraged Guatemalan officials to pursue a policy of cultural assimilation. Government officials believed that participation in the market and purchasing new material goods—clothing, radios, credit and debt—was a sign of rural development that symbolized the transition from indigenous campesino to ladino farmer.[48]

The *Liberación* government's actions did not measure up to their rhetoric about private

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[45] Secretaría de Propaganda y Divulgación de la Junta Gobierno. *Estatuto Agrario*. Decreto 559 (Guatemala City: Imprenta Liberación, March 1, 1956), Chapter 6, article 29; Handy, *Revolution*, 196; Adams, *Crucifixion by Power*, 145-146.

[46] Streeter, *Managing the Counterrevolution*, 152.

[47] Guatemala's Indigenous population were seen as both targets of communist organizers and enigmatic bastions of tradition, purportedly content to subsist where modern people should strive to progress. Jorge Arenales assured Americans that the Indigenous majority "never became communists and were in fact as much trouble to the Arbenz crowd as they are a problem to us now." For further exploration of this charaterization of Indigenous peoples as victims lacking agency, see Gould and Lauria-Santiago's work on the 1932 massacre in El Salvador. Gould and Lauria-Santiago, *To Rise in Darkness*. For commentary about giving land to ladinos before "primitive Indians" see "Agrarian Reform in Guatemala: U.S. Congress, Material Given to Sheldon Kaplan, House Foreign Affairs Committee," February 28, 1957, Rg 59, Entry # 5730, Box 4, "Photos: 1958 – Guatemala – Agriculture"; "Proposed Speech by Jorge Arenales in US," November 15, 1956," RG 59, Entry A1 5730 Box 2, folder: in "Guatemala – ICA – Grant Aid." NARA.

[48] For discussions of the ladino and indigenous identity see Charles Hale, *"Más que un indio": Racial Ambivalence and Neoliberal Multiculturalism in Guatemala* (SAR, 2006). See also Timonthy J. Smith and Abigall E. Adams, eds., *After the Coup: An Ethnographic Reframing of Guatemala, 1954* (Urbana, Chicago and Springfield: University of Illinois Press, 2011); Virginia Tilley, *Seeing Indians: A Study of Race, Nation, and Power in El Salvador*, (Albuquerque: University of New Mexico Press, 2005).

landownership as a requirement of a successful land reform and increased rural productivity. A year after Decree 559's implementation, US observers criticized the government's handling of the land reform: "Legal recognition of the new campesino holdings has been slow in forthcoming with the result that the new landowners have been reluctant to initiate improvements."[49] The government maintained that the distribution of land was continuing apace. However, even generous estimates concluded that the *Liberación* government distributed just under 8,000 land titles by the end of 1956. The government showed little sign that it could—or wanted to—rapidly increase the speed of land titling. Instead, Guatemala's elite focused on campesino productivity as key agrarian issue problem facing Guatemala. Sandoval Alarcón, a key adviser of Castillo Armas, noted, "[T]he real agrarian problem of Guatemala is not the scarcity of land but rather that the lands be made to produce more."[50]

The Castillo Armas government encouraged more technical outreach and mechanization work to improve yields but placed special emphasis on hybrids, promising to import new varieties from Mexico and Cuba to boost productivity. The government argued that while nearly 69% of Guatemala's arable land was planted with corn, yields were very low at 605 lbs per acre.[51] The government's slow movement on agrarian reform was compounded by persistent public anxiety about food shortages and growing rural poverty. President Castillo Armas' emancipatory rhetoric about a new Guatemala was betrayed by his government's reputation for repressing labour and popular organizing.[52] By the time President Castillo Armas was assassinated in the summer of 1957, he had already suppressed four major coup attempts.[53]

A former government official under Jorge Ubico, General Ydígoras Fuentes, returned from exile and ran for the Presidency after the death of Castillo Armas. He had already run for

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[49] Marginalia responded that this assesment was "rather harsh," and noted that 8,000 land titles had already been distributed, with 5,000 per year planned in future. "An Analysis of the Guatemalan Economy with Specific Reference to the U.S. Aid Program," RG 59, Entry A1 5730, Box 2, Folder: "1956 Guatemala ICA."

[50] He was also a leader in the student Anti-Communist Association and the head of the extremely conservative Movimiento Liberación Nacional, which was connected to death squads. Jennifer Schirmer, *The Guatemalan Military Project: A Violence Called Democracy* (Pittsburg: University of Pennsylvania Press, 2010), 30; Handy, *Gift of the Devil*, 191.

[51] They also secured assistance from the Rockefeller Foundation's Central American Cooperative Corn Improvement Project which experimented with various corn hybrids on experimental farms close to Guatemala City and in Cuyuta. Rockefeller Foundation, *Central American Cooperative Corn Improvement Project: Director's Annual Report*, (New York, N.Y.: Rockefeller Foundation, 1956), 18; "Sobre Asistencia Economica de los Estados Unidos de Norteamerica a Guatemala en el Ejercicio Fiscal, 1957-58," May 7, 1957, Rg 59, Entry # 5730, Box 3, "1957 Guatemala ICA Grant Aid."

[52] Streeter, *Managing the Counterrevolution*, 53-55.

[53] Ibid.

the Presidency against Jacobo Arbenz during the 1950 election and was one of the candidates the US considered to lead the coup, but he claimed that the US conditions were too restrictive.[54] His campaign capitalized on widespread insecurity and food scarcity with the campaign slogan: "Ley, Alfabeto, Pan y Salud [Law, Literacy, Bread, Health]." A week before he was finally elected, he promised that every Guatemalan would be able to buy a chicken a week. Despite his populist campaign language, privately he assured the U.S. that he would support private capital and strengthen the military. A month after he was elected Ydígoras began to suppress organized labour and agricultural labourers.[55]

Ydígoras garnered support from the United States and Guatemala's elite because they believed he would suppress growing rural resentment more effectively than his predecessor. Ydígoras, however, was often bombastic and his opponents and allies saw his ideological inconsistency as a major liability, he often vocally challenged international allies and Guatemalan elites when they obstructed his ambitions.[56] His approach to development emphasized the importance of a strong state and international aid, but like Castillo Armas he recognized that the "social conquests of the revolution" could not entirely be undone.[57] Like Castillo Armas, Ydígoras Fuentes invoked the threat of communism to persuade the United States to fund Guatemalan projects with grant aid, instead of loans. In 1958, the President declared that the Guatemalan government urgently needed funds to buy new land for resettlement because they had run out of public land. Unlike Decree 900, the government's land reform efforts avoided expropriation and resettled campesinos on land that was already owned by the state. The Guatemalan government made a failed 1958 bid for a $95 million dollar aid packaged. When it failed, Ydígoras warned Eisenhower that "'[t]he common enemy of Communism, will not invade us from outside but flourishes among our hungry people. Krushchev is waiting at the door.'"[58]

The U.S. responded by facilitating IBRD and Export-Import Banks loans, but the Guatemalan Government continued to pursue credit aggressively. In 1959, they made four

[54] Gleijeses, *Shattered Hopes*, 249-252; Schlesinger and Kinzer, *Bitter Fruit*, 120-121.
[55] His election was contested by the MDN led Ortiz Passarelli. The ensuing struggle for power divided the military, which had to suppress demonstrations led by the former General Ydígoras Fuentes. Streeter, *Managing the Counterevolution*, 64-68.
[56] Roland H. Ebel, *Misunderstood Caudillo: Miguel Ydígoras Fuentes and the Failure of Democracy in Guatemala* (Lanham, Maryland: University Press of America, 1998), 83.
[57] Ibid.
[58] Streeter, *Managing the Counterevolution*, 130-132.

distinct Development Loan Fund applications in 1959. One of the applications focused on resettlement, asking the United States for an additional $7.5 million dollars so that the Guatemalan government could buy private land and resettle 4, 500 families by 1962. This was roughly equivalent to the number settled to date, and just a fraction of the nearly 100,000 families Decree 900 benefited.[59] They justified the settlement program as an integral part of their mission to build a new agrarian middle class. To Ydígoras' consternation, their application was refused. Indeed, of four Development Loan Fund applications submitted, all the public works projects were rejected and only the project supporting private rubber cultivation was approved.[60]

Though the state lacked the financial means and political willpower to use Decree 559 to compel landowners to surrender underutilized land, they repeatedly touted the success of their Agrarian Development Zones. The Guatemalan government used the distribution of land in these Agrarian Development Zones as a moment of political theatre—a public demonstration of their commitment to the peasantry—and an opportunity to reform recipients. Their goal was not simply to increase food production, but rather to create ideal citizens by removing them from the influence of the masses. As the major periodical *El Imparcial* noted, the Agrarian Development Zones were each loosely governed by "civic cores" that exercised "a gentle teaching" over recipients of land, encouraging them to become good citizens. [61] The DGAA justified its Rural Development Plan as an opportunity to transform the exploited campesino, crippled by an absence of initiative and their "indifference and fatalism." They argued that campesinos who received land through Decree 559 were transformed into productive citizens and "authentic human beings."[62]

The 1959 Development Loan Fund application followed an ideal family—a couple with 5 children—as they established a farm at Nueva Concepción. This large swathe of land in Tiquisate had once belonged to the UFCO, but it became an international showcase for the Guatemalan government's use of agrarian development to quell political discontent under Castillo Armas. The name Nueva Concepción referred directly to the *Liberación* government's efforts to create a new model of agrarian reform, which leveraged private property to transform

[59] The government claimed to have given properties to 7, 833 titles by September 1956. "Tierra en Propiedad, Matriomonio que Dignifica al Hogar, Acercamiento de la Familia Social, y Mantenimiento de la Fe en Dios," *Revista Tiquisate*, No. 2. September 30, 1956. For D900 beneficiaries see Handy, *Revolution*, 94.
[60] Streeter, 130-132.
[61] "Opina la Prensa: Problema Agrario: Planteamiento en el Congreso Indigenista." *Tierra*, 1, No. 3 (Julio 1959): 25.
[62] J. FOC. "Los Nuevos Campesinos Propietarios de Tierra," *Tierra*, 1, No. 3 (July 1959): 20.

rustic campesinos into modern farmers.[63] The DLF application argued that as they cleared "raw jungle" and established a modern farm, this family of impoverished campesinos became "progress minded" farmers who embraced mechanization and the market. This powerful narrative was supported by a carefully planned crop rotation that began with campesino fare—corn, plantains, and beans—and ended with a diversified 50-acre (28 manzanas) farm planted with livestock, tobacco, sesame, and rice. They also noted that the state had to establish a "rigid set of qualifications" because previous initiatives recruited settlers based on "political necessity." The DLF application concluded that disregard for the "applicant's farm background or other essential qualification…has seriously impaired successful colonization in many cases."[64] This was a veiled reference to political tensions between the state and frustrated campesinos that marked early efforts to colonize Nueva Concepción after the coup.

The struggle to establish Nueva Concepción was featured in newspapers that ran large spreads extolling the virtues of the new colony and the patriotism of its settlers.[65] Personal interviews reiterated the transformation of campesinos into small farmers, with savings, homes, and modernized farms. Early challenges, like sanitation and electricity issues, were downplayed.[66] Local officials did, however, emphasize the sinister threat posed by the rural poor, euphemistically described as "the floating population, people that approach the agrarian development zone without having passed any selection requirements."[67] The importance of agrarian colonies as symbols of progress and prosperity encouraged the Liberation government to regulate membership in the colony and patrol their borders, preventing free entry. For newly settled campesinos, this restriction on its freedom of movement and association was unexpected and unwelcome. Shortly after campesinos received land in Nueva Concepción, they began to

[63] Technicians played a key role in this process, instructing them how to improve yields. "Frondas de Prosperidad Nacional en el Agro de Tiquisate con la Fundación del Centro de Parcelamiento 'Nueva Concepción,"*Tiquisate*, Pueblo Nuevo Tiquisate, 25 June, 1956, 18-19. "Letter to US Ambassador from John M. Vebber" February 15, 1957. RG. 59 Entry # 5730, Box 3, "Folder: 1957 Guatemala ICA Grant Aid." NARA.

[64] The DLF application noted the importance of road infrastructure that connected farmers with markets. They emphasized that 50 acres was the absolute minimum for a viable farm unit, on smaller farms they would struggle to subsist and generate little to no marketable surplus, defeating the goal of national-self reliance. "Rural Development History and Study for Average Family at 'Nueva Concepcion'" Rg 59, Entry # 5730, Box 5, Folder: "1958-Guatemala Development Loan Fund (DLF)." NARA.

[65] A celebratory account was detailed in"El Agreste Dosel de Tierras Milenariamente Ociosas donde el Esfuerzo Liberador Hizo Nacer un Centro de Producción," *Revista Tiquisate*, No. 2. September 30, 1956.

[66] Streeter, *Managing the Counterrevolution*, 152.

[67] "Ahorro de Parcelarios en la Zona de Desarollo Agrario Nueva Concepcion: Brillante Fase de Desarrollo de la Comunidad en el Rico Parcelamiento." *El Imparcial*, June 22, 1957; "Desmonte de Dos Mil Hectáreas: Nueva Concepción se Habilitará en Total al Desarrollo Agrario," *El Imparcial*, July 11, 1957.

complain that the parcels meant to liberate them from want served instead as de facto prison cells.

A *Prensa Libre* article in February, 1958, reported that a "prison regime" existed in Nueva Concepción. Two rivers—the Coyolate and the Madre Vieja—and the Pacific Ocean, marked the boundaries of the new Agrarian Development Zone. A barbed wire fence enclosed the remaining border, with a single gate watched by a "guard with police powers." Residents complained that they were prohibited from selling timber that they felled while readying their land for planting. Lumber was an important supplementary source of income for campesinos who often waited months before they received their agrarian credits. The National Agrarian Bank made loans conditional on a visual inspection, but delays meant that many campesinos could see their corn fields grow to near maturity before they received the loans they needed.[68] Campesinos urged the DGAA to remove the gates and allow them free passage, because "they were given parcels in property and they continue being free citizens."[69] Decree 559 proponents emphasized that beneficiaries were landowners not renters, a key distinction from Decree 900 that encouraged usufruct. However, the debts campesinos incurred to buy land at market value from the state or private landowners limited both their freedom of movement and their ability to express political dissent.

The Agrarian Development Zones created by Decree 559 were promoted through high profile tours and personal stories of salvation. The DGAA focused on the story of Catalino Arredonto Mayén, a landless labourer and his small family who received 20 manzanas of land on Santa Isabel, close to Puerto San José. Though the piece was meant to highlight the benefits of the Agrarian Development Zones, read closely it also exposed fractures in government's development scheme. Arredonto Mayén borrowed nearly Q1000 to purchase his new land from the state and acquire the materials he needed to work the land. After several years he had reduced his outstanding debt by half, but his personal diligence did not protect him from distressing crop losses caused by forces beyond his control. "I try to pay punctually," he told the reporter, "although at times our crops go badly, like it happened to me who lost a crop of sesame and they said it was because of powdered pesticide applied with an airplane in a cotton plantation that is

[68] They claimed that their corn fields were often a metre tall before credits were given out. "Régimen Carcelario Priva en el Parcelamiento Nueva Concepción: Un Cercado de Alambre y un Guardián-Policía," *Prensa Libre*, February 6, 1958.
[69] Ibid.

close to here."[70] This offhand comment exposed the untenable contradiction at the heart of the *Liberación* government's agrarian development strategy: fostering a diverse web of small and medium scale farms was not truly viable so long as export agriculture was encouraged to grow with minimal regulation. The latter's insatiable hunger for land, labour and capital slowly enclosed and encircled the *colonias*, limiting their expansion and threatening residents and the local environment with pesticides. The continuing dominance of agro-exports on the Pacific Coast ensured that these development zones remained spaces for propaganda instead of social change.

Guatemalan elites were largely unfazed by the complaints of campesinos and they embraced the transformational promise of new colonias. In 1959, the Director of the DGAA and future president Enrique Peralta Azurdia toured the Agrarian Development Zones throughout the Pacific Coast. He lauded the humble, hardworking campesinos he met as the backbone of Guatemala's agrarian prosperity. He reminded them that they had complete political freedom and that their only obligation to the state was to work their new land.[71] The campesinos who received parcels were praised by the DGAA as the "architects of secure bread for the grandchildren."[72] Peralta Azurdia lauded beneficiaries of Decree 559 as humble folk, rooted to the earth. "He encountered men upright like trees," wrote the DGAA about his visit, "subject to the earth by roots of love and sacrifice, surely with such adherence as if to challenge the storms."[73]

Guatemalan elites were largely unfazed by the complaints of campesinos and they embraced the transformational promise of colonias like Nueva Concepción (Figure 21). In 1959, the Director of the DGAA and future president Enrique Peralta Azurdia toured the Agrarian Development Zones throughout the Pacific Coast. He lauded the humble, hardworking campesinos he met as the backbone of Guatemala's agrarian prosperity. He reminded them that they had complete political freedom and that their only obligation to the state was to work their new land.[74] The campesinos who received parcels were praised by the DGAA as the "architects of secure bread for the grandchildren."[75] Peralta Azurdia lauded beneficiaries of Decree 559 as

[70] "Cosecha de ciudanos libres: Importante Jira del Director de Asuntos Agrarios, Coronel Enrique Peralta Azurdia: En Las Zonas de Desarrollo Agrario Florece un Hombre Nuevo," *Tierra* 1. No.3 (1959), 2.
[71] Handy, *Gift of the Devil*, 213.
[72] "Cosecha de ciudanos libres: Importante Jira del Director de Asuntos Agrarios, Coronel Enrique Peralta Azurdia: En Las Zonas de Desarrollo Agrario Florece un Hombre Nuevo," *Tierra* 1. No.3 (1959), 2.
[73] Ibid.
[74] Handy, *Gift of the Devil*, 213.
[75] "Cosecha de ciudanos libres," *Tierra* 1. No.3 (1959), 2.

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[76] Ibid.

El Agreste Dosel de Tierras Milenariamente Ociosas donde el Esfuerzo Liberador hizo Nacer un Centro de Producción

En un valle cuajado de montañas vírgenes donde los siglos tejieron tupidas frondas de ceibas, cedros y caobas seculares, el espíritu alentador de propósitos patrióticos que contempló la situación de los campesinos sin tierra, halló con perfecta visión del futuro la tierra propicia para hacer realidad el Programa de Desarrollo Agrario, que es el más hermoso postulado del Movimiento de Liberación Nacional. Y así fue como esta área de terreno incultivado, en la jurisdicción de Tiquisate, fue elegido para asentar en ella una Colonia Agrícola de recia envergadura.

Milagro del esfuerzo transformador, fue que al limpiar las breñas montañosas con potente maquinaria y abrir caminos adecuados, allí mismo surgiera «Nueva Concepción», poblada zona de pujante desarrollo rural. Porque con la Liberación llegó el momento en que estas montañas dejaran de ser tierra ociosa.

Figure 21: Nueva Concepción, forest cleared for small farms

The article describing Peralta Azurdia's tour emphasized the primordial connection between the campesino and the tree, both bound to the land, both growing roots—familial and literal—that bound them to the soil.[77] The DGAA cautioned that severing the timeless connection between campesino and land invited social and economic instability, a comment that alluded to 1952 agrarian reform and the social unrest that followed. They argued that devout and hardworking campesinos that benefited from Decree 559 were "the best weapon against communist preaching and agitation.[78] The Guatemalan state used colonias as reformatory spaces, where loyal, productive, and modern citizens could be created from humble campesinos. As they transformed the wild Pacific Coast into a space of industry, the state would inculcate them with civic virtues that they deemed essential for Guatemala's future prosperity.

The government's attempts at agrarian reform did not generate the enthusiasm or public support they craved. In 1959, the Indigenista Congress was held in Guatemala City, but this opportunity to showcase Guatemala quickly turned into a debacle. Guatemalan attendees used the forum to denounce unequal land tenure and call for substantive agrarian reforms modelled on Decree 900. *El Imparcial,* often a proxy for establishment opinion, harshly rebuked these critics. They emphasized the "illusory results" of the reform that gave campesinos land in usufruct instead of property and then failed to give them needed technical assistance.[79] Though these rebuttals were well rehearsed by 1959, that they needed to be continually deployed demonstrated the lasting political support for substantive land reform. Though millions had been spent on new Agrarian Development Zones, food shortages were still common and inequality was widespread. The demand for a new Decree 900 was not just a call for land reform, but also for a government that took an active interest in the well-being of its citizens.

The Rise of Cotton

The fantastic growth of cotton from a fledgling industry to one of Guatemala's most import exports occurred after the coup. The cotton industry insisted that this was evidence of the productivity of unfettered private capital. However, the dramatic growth of cotton was only possible because the *Liberación* embraced the state-led model of development practiced by INFOP during the Revolution. The *Liberación* government invested heavily in road construction

[77] "Cosecha de ciudanos libres: Importante Jira del Director de Asuntos Agrarios, Coronel Enrique Peralta Azurdia: En Las Zonas de Desarrollo Agrario Florece un Hombre Nuevo," 1. No.3 (1959), 2.
[78] "Cosecha de ciudanos libres," 2.
[79] "Opina la Prensa: Problema Agrario: Planteamiento en el Congreso Indigenista," *Tierra,* 1 No. 3, (1959), 23.

and agricultural financing. Government spending in these areas enabled cotton growers to rapidly expand production across the Pacific Coast during the 1950s. They made large profits, while the state bore the financial risks. This approach forced campesinos to deal with the complex health consequences of chemical intensive cotton production, which manifested as pesticide poisonings and chronic hunger.

During his administration, Castillo Armas boasted that more roads were built between 1954 and 1956 than in all previous years. This infrastructure binge was financed with grants and loans from the United States, the IBRD and the Guatemalan state. The International Cooperation Administration, the precursor to US AID, was the most important funder for the ambitious highway project that connected coastal departments to the interior and linked Guatemala to the Inter-American Highway.[80] The Guatemalan government also contracted $18.2 million in loans for road construction from the International Bank for Reconstruction and Development.[81] Roads were also a major priority in the five year development plan (1955-60) released by Guatemala's semi-autonomous Economic Planning Council (CNPE). Their plan dedicated 55.6% of the projected 250 million dollar plan to roads. By comparison, public health and housing received 10% of the available funding and agriculture received 16.8%.[82] This massive expenditure on infrastructure did little to ameliorate food production problems, but new roads enabled export agriculture to quickly move crops out of the country. Castillo Armas claimed that roads were necessary for rural development because they helped campesinos in the highlands to access markets where they could sell their food and labour. However, even Guatemala's US allies were concerned that the *Liberación* government's development strategy was flawed. In 1956, U.S. Ambassador Edward Sparks worried that the Guatemalan government was overspending on highway infrastructure and neglecting the welfare of his citizens, a view shared by many officials in Washington.[83] Although corn production fell 10% between 1954 and 1956, only 2% of

[80] Bulldozers cleared forested land to open a 25km stretch of road from Cocales and Nueva Concepción. "Information," Feb. 11, 1956. RG 59, Entry A1 5730 Box 2, Folder: "1956 Guatemala ICA Grant Aid."
[81] The loan came with the expectation that Castillo Armas would pay back 1 million sterling that the Guatemalan government had cancelled unilaterally in 1944. Castillo Armas balked at repayment, citing domestic tension which caused frustration among bank officials. "Letter to US Ambassador from David Gordon" November 1, 1956, RG 59, Entry A1 5730, "Folder: 1956 – Guatemala – International Bank of Reconstruction and Development (IBRD)," NARA.
[82] Streeter, *Managing the Counterrevolution*, 142.
[83] "Letter to Roy. R. Rubottom, Jr., Deputy Assstant Secretary of State for Inter-American Affairs, Dept of State, Washington, from Edward J. Sparks." October 23, 1956. RG 59, Entry A1 5730, Box 2, ICA Folder: "1956 Guatemala ICA Grant Aid." NARA.

agricultural loans were designated to support food crops.[84]

Castillo Armas dismissed these concerns, arguing "private enterprise is timid to the point of being unwilling until the Government has shown the way."[85] He believed the government's role was to create conditions that would stimulate capital.[86] The *Liberación* government complemented its infrastructure spending with large investments in agricultural financing and, to a lesser extent, colonization. In 1956-57, half of the CNPE's $8.6 million budget for agriculture was spent on capitalization for banks that offered discounted loans to landowners that planted exports like cotton. Another $2.9 million from the agriculture budget was supposed to support large colonization efforts, including Nueva Concepción.[87] Colonization projects gave the impression that the government was working to improve rural wellbeing, but they also created accessible pools of labour close to rapidly expanding plantations.[88] An internal memo to the Under Secretary of State encouraged the US to keep funding colonization efforts because the 1952 agrarian reform "succeeded in deluding many simple people in its short-lived career toward chaos." The memo argued that resettling campesinos on the Pacific Coast would help "build up the agricultural middle class essential to national advancement."[89] With their focus on developing conditions for private capital to flourish, the state invested very little in agricultural extension and experimentation that might have benefited campesinos. In a country where 73% of the population worked on farms and 46% of the GNP was generated by agriculture, this was a shocking surrender of government initiative to the private sector at a time of rural crisis.[90] The economic rationale was more sensible, chronic poverty drove down wages and this enabled

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[84] Streeter, *Managing the Counterrevolution*, 154.
[85] "Letter to John W. Fisher, Guatemalan Desk Officer, MID-ARA from Edward J. Sparks, American Embassy, Guatemala," March 19, 1956. RG 59, Entry A1 5730, "Folder: 1956 – Guatemala – ICA – Klein & Saks." NARA. Streeter, *Managing the Counterrevolution*, 142.
[86] A State Department and ICA brief discussing the loans versus grant aid problem in in Guatemala, highlighted Castillo Armas' empowerment of the private sector. The brief concluded that his investments in road infrastructure and public health were intended to "create a basic environment conducive to private investment." "An Analysis of the Guatemalan Economy with Specific Reference to the U.S. Aid Program," RG 59 Entry A1 5730 Box 2 Photos: "1956 Guatemala ICA" NARA.
[87] Consejo Nacional de Planificación Económica, "Memorandum: Proyectos de Trabajos Para 1956/57 con Base en el Plan de Desarrollo Economico para Guatemala," February 1, 1956. RG 59, Entry A1 5730 Box 1, Folder: "1956 Guatemala Economic 5 year Plan." NARA.
[88] Ibid.
[89] "Memo to the Under Secretary from ARA-Mr. Holland: U.S. Grant Aid to Guatemala for FY 57" n/d. RG 59, Entry A1 5730 Box 2, Folder: "Guatemala—ICA—Grant Aid." NARA.
[90] A Klein & Saks report in 1957 found that large farms produced 62% of Guatemala's agrarian income, meaning that the majority of the profits accrued to a few hundred families. The majority of rural Guatemalans lived on just 40 quetzales per capita. Ministerio de Economia, *Political Economica del Gobierno de Liberación: Reunion con los Sectores de la Iniciativa Privada* (July 1957), 28.

plantation owners to produce exports more cheaply.

Cotton was the primary beneficiary of the *Liberación*'s infrastructure and agricultural policies. During the Revolution, INFOP stimulated cotton production with generous loans, research, and a fixed price for cotton.[91] Cotton production rose from almost nothing in 1949 to 42,703 in 1951-52 quintales and it grew by another 50% the following year. INFOP successfully encouraged small producers with technical advice and free seeds. After the 1953-54 harvest was collected, the government estimated that there were 96 large producers and 679 producers growing cotton on three manzanas or less. Together they produced nearly 100,000 quintales of cotton.[92] After nearly a century of failed schemes, INFOP transformed cotton into a viable export grown by large and small producers.

Although the coup devastated corn production, cotton fared well in the 1950s and rapidly overtook bananas as Guatemala's second most important export. During the 1954-55 harvest cotton growers expanded the land under production and collected a record shattering harvest of 200,000 quintales.[93] Many landowners planted cotton on land that they reclaimed from campesinos, creating a surge in production that could not be sustained without government intervention. The rapid growth of the cotton industry after 1954 was facilitated by a combination of minimal regulation, expanding road infrastructure, and the colonization of new, fertile land that was temporarily free of disease or pests. However, it would not have been possible without generous loans from state banks that enabled cotton growers to modernize their farms by purchasing the seeds, pesticides and machinery needed to grow production rapidly. This created a problem for the *Liberación* government, because they rejected the state-led development policies of the Arbenz government in favor of free markets with minimal regulation. Castillo Armas and his supporters tried to work around this issue by discrediting INFOP and its interventionist brand of rural development.

In July 1954, *El Imparcial* publicized the names of Arbenz supporters who received loans for cotton from INFOP and other lenders, including the CHN and the Bank of Guatemala. *El Imparcial* charged that one and a half million Quetzales in loans and credits were extended to the

[91] Cotton was bought at Q40 per quintal and sold at Q28.
[92] A quintal oro equals 100lbs of ginned cotton. "775 Productores de Algodón Inscritos en 12 Departamentos" El Imparcial, February, 1954; Mavis Ann Bryant, "Agricultural Interest Groups in Guatemala," M.A. Thesis, (Austin: The University of Texas, 1967), 78.
[93] "Problemas del Algodón: Producción que Merece Todo el Apoyo Bancario," *El Imparcial*, February 11, 1956.

"'big fish' and *politicones* [obsequious officials] of the Arbenz regime that know little or nothing of agriculture."[94] Detractors argued that INFOP favored government officials with cheap loans and bought their cotton crops at a substantial loss.[95] This inflammatory article provoked a torrent of letters to the newspaper, people named by the article denied they had received loans or that they had been obtained for different ends and paid off long ago. The first Director of INFOP, Carlos Leonidas Acevedo, was among the accused. He denied the charges and called for a "calm and dispassionate" analysis of the loans given out by INFOP, which he believed would demonstrate the rigorous loan application process and confirm that there was no "political discrimination."[96] The IBRD also joined the chorus calling for substantive reforms to INFOP.[97] They threatened to withhold their loans to the organization, unless the Guatemalan government rewrote INFOP's basic rules so that they were focused only on financing farmers with credits and loans.[98] Though INFOP jumpstarted the cotton industry, Guatemalan elites narrowly redefined the organization's mandate so that it was no longer able to offer technical advice and was limited to financing. The sustained attack on INFOP by large landowners was driven by a new development ideal that praised private capital and tried to curtail state power. Large

[94] The source for this information is not given. The detail on financial transactions and *El Imparcial*'s vocal criticism of the revolutionary government makes it very likely that the information came directly from the government. Arbenz at top of list with Q96, 800. (top recipient of INFOP loans). His Minister of Agriculture, Nicolas Brol, was also accused. "Millón y Medio de Quetzales en Préstamos a los Arbencistas: Cultivo de Algodón Era un Monopolio en Manos de un Grupo Políticos," *El Imparcial*, July 20, 1954.

[95] "Arbencistas Vendían a Q40 su Algodón al INFOP; Este a Q28: Climax de una Operación Inmoral por Funcionarios del Gobierno Comunistoid,"*El Imparcial*, March 29, 1955.

[96] "Constancia del Señor Carlos O. Zachrisson P.: Sobre su Crédito de 8,000 Quetzales," *El Imparcial*, July 22, 1954. "Otra Aclaración del Lic. Carlos Leonidas Acevedo: No Se Dedica a Cultivar Algodón," *El Imparcial* July 27, 1954. "Indebidamente Incluído en el Millón y Medio: Explica el Sr. J. A Reyes Cardona," *El Imparcial* July 23, 1954. One recipient named in the article, acknowledged that he received a loan to finance his cotton farm but he was dismissed from his position as Director of the Civil Guard because of his anti-communist beliefs. "F. Antonio Girón Aclara su Crédito para el Algodón: Aseveraciones que no le Tocan," *El Imparcial*, July 22, 1954.

[97] Some of these were positive, including payment on debts that the Guatemalan government owed INFOP and a pledge to meet a funding minimum equal to 2% of the national budget. Without additional financial support the IBRD was concerned that INFOP would lack the administrative and finacial ability to manage a growing credit program. The notion of internal debts between government agencies was rebuked by Klein & Saks but the IBRD leveraged development funds that the Castillo Armas government wanted for INFOP to extract concessions, including repayment of $1 million sterling debt cancelled by the Guatemalan government in 1944 and "back capitalization" for INFOP. They calculated that these requirements added nearly $6 million to the public debt and the IBRD was uncertain about the reaction from Guatemalan Congress. "Letter to Senor Don Jorge Echeveria, Ministro de Hacienda y Credito Publico from J. Burke Knapp, Director of Operations, Western Hemisphere, IBRD," May 16, 1956; "Letter to US Ambassador from David Gordon" November 1, 1956; "Confidential: Appointment with Mr. Burke Knapp, IBRD" April 23, 1956. RG 59, Entry A1 5730 Box 1 Folder: "1956 – Guatemala – International Bank of Reconstruction and Development (IBRD)" NARA.

[98] "Letter to Klein & Saks from Marc P. Quinn," April 20, 1956 RG 59, Entry A1 5730 Box 2, Folder: "1956 – Guatemala – ICA – Klein & Saks" NARA.

landowners who lost land during the agrarian reform were deeply suspicious of any state agency that might limit or constrain their ability to extract wealth from their land and labourers.

Several months after the coup a new national growers association, the Asociacion Guatemalateca de Productores del Algodón (AGUAPA), was formed that supplanted INFOP as the main advocate for cotton producers. Although AGUAPA criticized the agrarian policy of the Arbenz government, it copied the centralized model used by INFOP and tried to establish a private monopoly on cotton production. By 1955, AGUAPA controlled almost 65% of domestic cotton production. AGUAPA predicted that yields in 1955-1956 would exceed 240,000 quintales. This anticipated production increase was driven by the influx of new producers, many of whom had little experience with cotton but were attracted by record returns of previous years. Incessant rains in the fall of 1955 destroyed plants and damaged cotton bolls, causing Guatemala's first cotton crisis. Despite a substantial increase in land under cultivation, production per manzana fell 30% when compared to the previous year. The problem was compounded by a decline in global cotton prices, caused by the US putting excess cotton on the market.[99] Speculators and large landowners who gravitated toward cotton production after the coup quickly abandoned their newly planted land.

Farmers who invested in cotton expecting lucrative returns lashed out, attacking INFOP and demanding that the state implement a more liberal loan policy to save them from bankruptcy.[100] Cotton farmers had invested heavily in machinery and chemicals to improve production. They hoped production would reach 40 or 50 quintales per manzana, but the rains halved yields and farmers were left with huge debts. They called for INFOP to either write off debts or freeze repayments.[101] AGUAPA estimated that 80% of cotton farmers needed urgent financial assistance before they could begin planting their next crop. With good yields they believed that 40% of cotton farmers could pay off their debts the following year, if just barely, but roughly 20% would need additional assistance to help cover their loans. AGUAPA urged the state to increase financial support for cotton farmers because cotton was a source foreign exchange, rural employment, and the only way out to escape "the monoculture politics" of

[99] "Inversión Fue Mayor y Menor Producción: Condiciones que Fueron Nocivas; Ayuda Bancaria es Indispensible," *El Imparcial*, April 16, 1956; "Q2,700,000 en Algodón Guatemalteco para la Exportacion Vendidos; Superando Baja por las Lluvias," *El Imparcial*, February 10, 1956.
[100] "Problemas Del Algodón: Indispensable Protección a los Productores," *El Imparcial*, 27 April 27, 1956.
[101] "Situación de Algodoneros: Por Razon de Malas Cosechas en Este Año," *El Imparcial*, January 20, 1956.

coffee.[102] AGUAPA warned that if INFOP and the Bank of Guatemala failed to increase the loans available to cotton farmers, there would be a rapid decline in production and a surge in rural unemployment that threatened the fiscal well-being of the nation.[103] AGUAPA criticized INFOP's handling of loans, but their cotton growers were heavily dependent on the cheap loans provided by the state.

Throughout the 1950s, the cotton industry was divided between members of the dominant AGUAPA group and its opponents, which grew in power over the decade and eventually formed the more powerful Consejo Nacional de Algodón.[104] In December 1955, AGUAPA's critics wrote several editorials for *El Imparcial* analyzing the crisis facing the cotton industry. AGUAPA bore the brunt of their criticism. Though rains were acknowledged as the direct cause of the "calamitous" crop failures of 1955, critics cited AGUAPA's "tyrannical monopoly" over cotton growers as the structural cause of the industry's malaise. In a xenophobic tirade, they alleged that AGUAPA's Directors were from El Salvador and that they acted against the interests of Guatemalan planters, making decisions that were advantageous to themselves and their mother country.[105] They accused the foreign-controlled AGUAPA of repeating INFOP's mistakes, trying to control private initiative instead of giving landowners the financial means to prosper independently: "AGUAPA turned out like an ill-mannered servant, mouthy." The editorial maintained that "not all cotton growers emerged in the shadow of INFOP or prospered by sucking blood."[106] AGUAPA's critics argued that the cotton industry was full of "opportunists who passed themselves of as revolutionaries" whose poorly managed farms were ripe for failure.[107] This heated rhetoric revealed the deep schisms among large landowners, who fought amongst themselves for preferential access to state funds. Many landowners who had only

[102] Inversión Fue Mayor y Menor Producción: Condiciones que Fueron Nocivas; Ayuda Bancaria es Indispensible," *El Imparcial*, April 16, 1956.
[103] "Beneficios que Rinde la AGUAPA: Entre los Asociados y Cultivadores de Algodón; Vitaliza Zonas del País." *El Imparcial*, December 21, 1955.
[104] Mavis Ann Bryant identified 6 different groups of cotton growers in Guatemala, with the major division being between AGUAPA members and AGSA members, many of whom were also oil producers. Cotton growers cooperated to create AGUAPA in a moments of crisis, shortly after Castillo Armas repealed of legislative protections. Cotton growers from Retalhuleu, who also produced oils, exited AGUAPA quickly because of their interests conflicted with AGSA members. The decision to construct a gin for AGUAPA members in 1959 led to the exit of leading AGSA growers and a progressive decline in AGUAPA's influence. Mavis Ann Bryant, "Agricultural Interest Groups in Guatemala," M.A. Thesis (Austin: The University of Texas, 1967), 83-85.
[105] "Dramático S.O.S.: Algodoneros Guatemaltecos en Crisis, (I)" El Imparcial, December 17, 1955.
[106] "Dramático S.O.S.: Algodoneros Guatemaltecos en Crisis, (II)" *El Imparcial*, December 19, 1955.
[107] Ibid.

recently secured the return of their land refused to join AGUAPA because they did not want to surrender control to an outside organization, but they also needed plentiful loans to support capital intensive cotton production.

There was also a third faction of technicians, industry critics, and government officials who supported technical and fiscal oversight of the cotton industry. With its ties to the previous administration, INFOP was a convenient patsy used by landowners eager to avoid responsibility for their debts incurred by poor management or the failure to invest in production. "Those producers," they wrote, "make a double planting: cotton and antagonism against INFOP among their workers."[108] Though it was often attacked, INFOP had muted international support and vocal domestic allies who praised the organization for incubating the cotton industry. INFOP's defenders believed that government regulation was essential for the development of a healthy, productive and sustainable cotton industry. Shortly after the coup, observers voiced their concern that cotton farmers were overusing pesticides so that they could prevent pests and guarantee high annual returns.

In 1955, the head of health and safety for Guatemala's Institute for Social Security (IGSS) travelled through cotton producing regions in Escuintla, investigating a sudden surge in pesticide poisonings. He found that workers were not given the proper protective equipment and received minimal safety training. When he asked a 19 year-old hospitalized for pesticide poisoning in Escuintla if he used safety equipment when spraying cotton plants, the worker responded:

> No. At two in the afternoon I leave work and I go to the milpa.—Do you always wash yourself after fumigating? –Sometimes I wash in the river. – But you know that you should wash yourself because otherwise it intoxicates you? –No. I was when the skin itches me a lot.[109]

Even when workers were given masks and gloves, they were often worn and torn such that the IGSS official considered them more hindrance than protection. IGSS strongly encouraged landowners to conduct regular safety training, because turnover was high and many workers were poorly educated and illiterate. Warning labels were indecipherable to workers who could not read. The article featured an image of food and beverages resting innocently on a barrel of

[108] "El Algodón y Las Espinas," *El Imparcial*, July 18, 1956.
[109] "A Pesar de la Campaña de Prevención, Suceden Numerosos Casos de Intoxicación por Insecticidas en las Plantaciones Algodoneras," *El Imparcial*, November 25, 1955

pesticides with the subtitle: "Carelessness like this, captured unexpectedly by the camera, is the cause of intoxications on cotton plantations."[110] While he applauded the efforts of a few progressive farmers who educated workers and supplied them with appropriate protective gear, the official concluded that most cotton farmers did little to protect workers leading to a "massive and generally tragic accidents."[111] IGSS encouraged planters to protect the health of cotton workers but also called for the state to regulate pesticide use.

These reports were provocative, but there is no indication that the government took measurable steps to regulate pesticide use until the early 1960s. By that time, pesticides had become synonymous with cotton and the potential for regulation provoked frenzied opposition from cotton growers who believed that the productivity of the industry depended on cheap and plentiful pesticides. Nevertheless, sustained criticism from INFOP and IGSS demonstrates that even under the relatively repressive regimes of Castillo Armas and Ydígoras Fuentes there was a small space for critique of landowners. Those criticisms had to stress wise use and rational development, but in this space of contention critics continued their efforts to regulate and reform private power.[112] Only with the democratic opening of 1966, did these technicians, bureaucrats and journalists find the political opportunity to openly criticize the cotton industry, the most repressive and abusive agricultural sector in Guatemala.[113]

Cotton production experienced a painful contraction in 1955, but the industry rebounded with the financial assistance of their nemesis and benefactor INFOP. Despite sustained criticism from the private sector and concerns about the health consequences of cotton production, INFOP financed almost all of the cotton grown during the 1950s.[114] AGUAPA tried to retain its control over cotton growers by emphasizing their successful lobbying efforts, boasting that they pushed

[110] "A Pesar de la Campaña de Prevención, Suceden Numerosos Casos de Intoxicación por Insecticidas en las Plantaciones Algodoneras," *El Imparcial*, November 25, 1955

[111] Misinformation was also common. Workers who were exhausted by arduous piece work and fell ill on plantations, sometimes took extreme steps to cure their illnesses so that they could continue working. The article ended with an interview of Laura C. de Muñoz, who almost died after she consumed a mix of insecticides because she was told that they were an excellent "purgative". "A Pesar de la Campaña de Prevención, Suceden Numerosos Casos de Intoxicación por Insecticidas en las Plantaciones Algodoneras," *El Imparcial*, November 25, 1955.

[112] William Roseberry, "Hegemony and the Language of Contention," Everyday Forms of State Formation: Revolution and the Negotiation of Rule in Modern Mexico, eds. Gilbert M. Joseph and Daniel Nugent (Durham and London: Duke University Press, 1994), 355-366.

[113] See Conclusion for further discussion of this movement.

[114] INFOP financed in 1956, 15, 317 manzanas; in 1957-58, they financed 15, 843 manzanas and loaned Q 2,907,384.25, sugggesting that the greater part of their discretional funding meant to finance new crops was spent on cotton. "La Politica Algodonera del INFOP: Con Trayectoria Porvenirista," *El Imparcial*, November 22, 1957.

INFOP to increase loan percentages from 30% to 60% of crop value.[115] The downturn in 1955 shook farmer confidence, and many landowners let their land lie fallow or planted alternative crops including corn. It took several years for the scale of cotton production to surpass its 1955 peak of 22,480 manzanas. The industry experienced renewed growth in 1957-58, with 25,135 manzanas planted in cotton.[116] This renewed growth was spurred by changes to INFOP's fiscal situation. The Bank of Guatemala offered Q 1,500,000 in rediscounted loans to INFOP, earmarked specifically for the cotton industry. This nearly doubled the funds available to cotton farmers.[117] These loans recognized the growing importance of cotton as a lucrative new export crop, but they also indicated the growing moral and financial bankruptcy of the *Liberación* government that supported private capital at the expense of most Guatemalans. Even US observers were concerned that the state's generous distribution of credits and cheap loans to cotton growers was financial unsustainable and diverted funds from other development initiatives.[118]

The Guatemalan government's financial support encouraged cotton growers to plant cotton. In 1958-59 the cotton industry hit a production peak, with nearly 40,000 manazanas planted in cotton and an estimated harvest of 350,000 quintales of cotton. Landowners were planting more cotton and getting higher yields per manzana. Throughout the 1950s, yields grew from 3.6 to 11 quintales per manzana.[119] By 1960, Guatemala boasted one of the highest yields

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[115] AGUAPA made this claim while defending themselves from accusations that they were controlled from abroad. They also spoke highly of INFOP's financial contribution to the industry, but again their members were highly reliant on state loans. Additionally, AGUAPA claimed to have significantly reduced aerial fumigation, pesticide and seed costs for members. "Beneficios que Rinde la AGUAPA: Entre los Asociados y Cultivadores de Algodón; Vitaliza Zonas del País." *El Imparcial*, December 21, 1955.

[116] "Areas Cultivadas," *Informativo Algodonero*, no. 7 and 8 (1960): 22; "Cupo Anual Amplian para Redescuentos: Financiación del Cultivo en Firme," *El Imparcial*, 8 June, 1957.

[117] Cotton growers previously competed for loans from a pool of Q1,500,000 intended to stimulate new crops. "Cupo Anual Amplian para Redescuentos: Financiación del Cultivo en Firme," *El Imparcial*, June 8, 1957.

[118] U.S economic advisors Klein & Saks who cautioned that Guatemala lacked the means to fund large scale credit programs without diverting funds from other development initiatives. Quinn cautioned that the US would be called upon to meeting funding shortfalls caused by the credit policy. "Letter to Klein & Saks from Marc P. Quinn," April 20, 1956 RG 59, Entry A1 5730 Box 2 Folder: "1956 – Guatemala – ICA – Klein & Saks" and "Letter to Senor Don Jorge Echeveria, Ministro de Hacienda y Crédito Público from J. Burke Knapp, Director of Operations, Western Hemisphere, IBRD," May 16, 1956; "Letter to US Ambassador from David Gordon" November 1, 1956; "Confidential: Appointment with Mr. Burke Knapp, IBRD" April 23, 1956. RG 59, Entry A1 5730 Box 1 Folder: "1956 – Guatemala – International Bank of Reconstruction and Development (IBRD)"

[119] "Calcúlase en 275,000 Quintales la cosecha de algodón de este año: Sobrepasará en 20 mil quintales a la producción que hubo el año anterior," *El Imparcial*, August 4, 1959; "Areas Cultivadas," *Informativo Algodonero*, no. 7 and 8 (1960): 22.

per manzana in the world, at 13 quintales per manzana, bested only by Israel (Figure 22).[120] High yields were a by-product of both technical interventions and the cultivation of newly cleared and highly fertile coastal land. The cotton industry benefited tremendously from an antitrust suit filed by the Department of Justice against the United Fruit Company weeks after the coup. The 1958 decision in this case forced the United Fruit Company to restructure its organization and sell its Guatemalan holdings.[121] Most of this land was located in Tiquisate, a region identified as ideal for cotton cultivation as early as 1956.[122] This influx of new land, highly fertile and apt for mechanization, allowed cotton growers to continuing expanding their operations rapidly throughout the early 1960s.[123]

Year	Area Cultivated	Yield	Quintales Per Manzana
1949-50	--	13 140	--
1950-51	--	19 858	--
1951-52	11 712	42 703	3.6
1952-53	13 000	74 954	5.7
1953-54	16 031	132 194	8.2
1954-55	22 840	175 341	7.6
1955-56	30 374	208 032	6.9
1956-57	18 519	218 524	11
1957-58	25 135	286 770	11
1958-59	39 562	352 513	8.8
1959-60	25 291	*350 000	*13

Figure 22: Area cultivated and production per manzana, 1949 to 1960[124]

Though the government enabled the cotton industry to grow rapidly with cheap loans and financial assistance, cotton planters were zealous defenders of private property and they rejected

[120] Israeli production was 15 quintales per manzana, "Intensificación del Cultivo de Algodón," *El Imparcial.* October 14, 1960.
[121] Dosal, *Doing Business with the Dictators*, 229-230. For an overview of United Fruit Company's reorganization in response to various anti-trust suits, see Laura T. Raynolds, "The Global Banana Trade," *Banana Wars: Power, Production, and History in the Americas*, eds. Steve Striffler and Mark Moberg (Durham: Duke University Press, 2003), 26-27.
[122] "Futuras Orientaciónes de La Producción Algodonera Guatemalteca: Especialista de la FAO (Naciones Unidas) Expone Sus Principales Puntos de Vista," *El Imparcial*, July 30, 1956
[123] "Perspectivas del Algodón: Posibilidad de Extender los Cultivos," *El Imparcial*, February 25, 1961.
[124] Asterisk indicates estimates made by AGUAPA. The 13 quintales per manzana estimate was later confirmed. Adapted from "Areas Cultivadas," *Informativo Algodonero*, no. 7 and 8 (1960): 22.

even limited efforts to redistribute land to address food production problems. In 1958, the state attempted to subdivide INFOP's Cuyuta plantation so that it could be distributed to campesinos for corn production. Cuyuta was the birthplace of modern cotton production in Guatemala. Despite the economic and social turmoil generated by the coup, it remained under INFOP's control and it was still one of Guatemala's largest cotton producers in 1958. INFOP used the farm to experiment with new corn hybrids and new cotton varieties; over half of the 240 caballeria plantation was dedicated to cotton production and annual yields were roughly 60,000 quintales. Cotton farmers acknowledged the importance of corn as the "indication of the well-being of the campesino," but they were adamant that the plantation remain focused on "white gold." They argued that subdividing Cuyuta was a threat to crop diversification in Guatemala.

In a profound reversal of Revolutionary-era agricultural policy, they encouraged the state to focus on increasing corn production in the highlands so that coastal land could be wholly dedicated to exports.

> It is well know that our Indian produces a large quantity of the vital grain [corn], which is never well monitored by our statistics, and we constantly suffer cycles of abundance and scarcity, or unjustified variations in the price in one zone or another, we must actually control the situation of corn using silos and the derivation of its use for cattle and subsidiary industries.[125]

This analysis echoed that invoked during the 1930s and 1940s, when farmers shifted the blame for instability in corn production onto campesinos while ignoring systemic barriers to production including capital, technical assistance and access to land. Moreover, their emphasis on creating alternative markets for corn including the cattle industry contravened technical advice given by INFOP agronomists during the Revolution. They argued that using corn as cattle feed was dangerous, because it undermined domestic food supplies and ignored other cheap and plentiful carbohydrates including bananas.[126]

The deal to subdivide Cuyuta was brokered with SCIDA, one of *servicios* created by ICA to offer technical advice to the Ministry of Agriculture. The US allegedly made over 10 million dollars in financial assistance dependent on the subdivision of large government properties including Cuyuta. Cotton planters dismissed SCIDA's assistance as well-intentioned but

[125] "Porvenir del Algodón: Parcelamiento de Cuyuta no Parace Lógico," *El Imparcial*, September 29, 1958.
[126] Robert L. Squibb and Miriam K. Wyld, "Alimentos Mas Baratos Para La Industria Pecuaria en Guatemala: I—Sustitutos de Maíz" *Monitor Del INFOP* Vol. 2, No. 6 (1951): 46.

misguided meddling in Guatemala's economic development. Their perspective was heavily influenced by lingering animosity about the perceived injustices visited upon large landowners during the agrarian reform during "the days of the wild agrarian reform that took advantage of the lands of the Finca Cuyuta for their demagogic propaganda."[127] They warned the government that subdivision of cotton lands was a financial folly that wasted the money already spent preparing fields for the upcoming harvest and undermined the competitiveness of the country's most important cotton producing region. To reinforce this point, there was passing mention of a private offer to buy Cuyuta for 16 million Quetzales. Cotton growers alleged that the government was forced to reject the offer because SCIDA's financial assistance was contingent on the subdivision of Cuyuta for corn production.[128]

Sustained resistance from the private sector significantly delayed the subdivision of Cuyuta, despite agreements made with SCIDA. In September 1960, several officials fired from the DGAA revealed to reporters that the plan to parcel Cuyuta had been suspended because renters refused to surrender their land. Those implicated included the Minister of National Defense, Coronel Rubén González Sigui, the Director-General of Roads, Coronel Heculano Hernández and other members of the military. The head of the DGAA, Crisóstomo Castillo, denied the accusations, reminding Guatemalans that INFOP itself had rented to members of the military during the agrarian reform.[129] Castillo insisted that the government remained committed to agrarian reform and that Cuyuta would be divided and distributed to campesinos and members of the middle class in the coming month. Yet Castillo also tried to minimize the Cuyuta story by refocusing media attention on the new land being offered to middle-class Guatemalans willing to migrate to Sebol in Alta Verapaz. He projected that this would soon be the Houston of Guatemala because of its proximity to oil reserves.[130] Despite entrenched opposition, Cuyuta was

[127] "Porvenir del Algodón: Parcelamiento de Cuyuta no Parace Lógico," *El Imparcial*, September 29, 1958.
[128] "Parcelación de 'Cuyuta: Un Fuerte Impacto para Producción Algodonera," *El Imparcial*. n/d,
[129] Of course, INFOP had significant issues with some of its military tenants, including Coronel Monzon's refusal to clear his land. "Que se Niegan a Entregar la Tierra para Parcelar Cuyuta: Se Declara por Despedidos de la DGAA, pero Castillo Ha Negado Tal Especie," *El Imparcial*, September 30, 1960.
[130] The government's DLF loan application called migration to interior regions less ideal, citing limited access to markets as a barrier to establishing viable farms. "Rural Development History and Study for Average Family at 'Nueva Concepcion'" Rg 59, Entry # 5730, Box 5 Folder: "1958- Guatemala Development Loan Fund (DLF)." For efforts to settle interior regions like the Ixcán, see Beatriz Manz, *Paradise In Ashes: A Guatemalan Journey of Courage, Terror, and Hope*. (Berkeley: University of California Press, 2004). Luis Solanno, *Guatemala Petróleo y Minería en las Entrañas del Poder*, (Ciudad de Guatemala: Inforpress, 2005. Liza Grandia, *Enclosed: Conservation, Cattle and Commerce among the Q'eqchi' Maya Lowlanders*, (Seattle: University of Washington Press, 2012).

subdivided several years later. Roughly 220 hectares were reserved for agricultural experimentation where new corn hybrids like Cuyuta 63 were developed, capable of producing more than 80 quintales per manzana. The rest of the plantation was subdivided, creating approximately 275 parcels of 15 hectares each. As of 1972, the majority of these parcels were dedicated to corn.[131] Like Nueva Concepción, Cuyuta became an island of very small farms stranded in a sea of large plantations.

The government's focus on infrastructure spending and agricultural financing after the coup was a blessing for cotton growers and a disaster for campesinos. Guatemalan progressives began to solve food production problems during the Revolution by supporting campesino production and instituting an ambitious agrarian reform: the reversal of the agrarian reform displaced thousands and precipitated widespread food shortages. The *Liberación* government entrenched food shortages with an economic policy that empowered large landowners and limited campesino access to land, capital and new agricultural technologies. The brutal suppression of campesinos during the *Liberación* and the government's focus on nurturing private capital created widespread chronic hunger and malnutrition. In a report on infant mortality presented to the 3rd Central American Congress in 1956, Doctor Ernesto Cofiño argued that Guatemala's most pressing problem was the "illness of hunger."[132]

This diagnosis was confirmed by the US Mutual Security Program. Their 1956 report on the grant aid program in Guatemala reported that the health of the population was "deplorable." Despite considerable international investment, Guatemalans had some of the highest morbidity and mortality rates in the Americas. Not only was the mean lifespan for Guatemalans shockingly low—43.64 years for the general population and 38.34 for indigenous adults—deaths of children under 5 accounted for 49% of deaths. Deaths and illness were blamed on a combination of poor sanitation, protein deficiencies, and a lack of dietary diversity. [133] They concluded that the *Liberación* government overspent aid money on highways and made no substantive

[131] "Valiosos Resultados Arroja la Investigación en Varios Cultivos," *El Imparcial*, August 6, 1965; Francis Gall, "Cuyuta," *Diccionario Geográfico Nacional de Guatemala*, 3rd edition (Guatemala, C.A.: Instituto Geographía Nacional, 2000), 1007.
[132] "Enfermedad del Hambre: Un Brillante Estudio en Pro del Niño," *El Imparcial*, December 1, 1956.
[133] "Latin America-Guatemala: Non-Military Mutual Security Programs by Function, FY 1956-58" Rg 59, Entry # 5730, Box 3, Photos: "1957 Guatemala ICA Grant Aid." For more details on the caloric shortages see "Sobre Asistencia Economica de los Estados Unidos de Norteamerica a Guatemala en el Ejercicio Fiscal, 1957-58," p 14. Guatemala, Mayo 7, 1957 Rg 59, "1957 Guatemala ICA Grant Aid", Entry # 5730 Box 3 Folder: "1957 Guatemala ICA Grant Aid." NARA.

improvements in the welfare of Guatemala's poor.

The Institute of Nutrition of Central America and Panama (INCAP) was at the forefront of diagnosing and treating hunger in Central America. Between 1949 and 1959, INCAP performed nutritional surveys of Guatemalan indigenous communities that identified chronic malnutrition and high infant mortality as key public health issues.[134] A report by INCAP and US economic advisors Klein & Saks reported widespread deficiencies in the basic diet of the rural poor. Using basic calorie requirements for a traditional diet, the 1956 report found that Guatemala produced only 68% of the cereals required to feed its population, 29% of the fats and oils, 26% of the milk and 50% of the meat needed. Only sugar exceeded national requirements, by nearly 62%.[135] The report confirmed that state's prioritization of exports over food crops forced Guatemala's poorest to live in extreme privation.[136]

INCAP began research on an affordable, plant-based nutritional supplement that was high in protein and used local ingredients during the Revolution.[137] After testing different flour mixtures derived from plants and seeds, the organization finally settled on formula number nine. In 1957, 2-year old Jose Valentín Coroy was the first subject to receive Incaparina to deal with problems associated with extreme protein deficiency. He rapidly put on weight, regained energy and was considered cured within 3 months.[138] In August 1959, the Ministry of Public Health and Social Assistance declared that the new product would lead to a "revolution" in Central American nutrition. The Number 9 mix used ingredients that were common in Guatemala like corn, millet, and cotton seed flour—formerly considered toxic—and was fortified with Vitamin A. The final mixture was selected over a previous mixture based on sesame, which INCAP

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[134] The most famous INCAP study examined hunger and infant mortality over a long period of time. Leonardo J. Mata, *The Children of Santa María Cauqué: A Prospective Field Study of Health and Growth* (Cambridge, Mass: MIT Press, 1978).

[135] For sugar production in the late 1970s and 1980s and the industry's reliance on domestic consumption to offset international market fluctuations see Elizabeth Oglesby, " 'We're No Longer Dealing With Fools": Violence, Labor and Governance on the South Coast," *War by Other Means: Aftermath in Post-Genocide Guatemala*, eds. Carlotta McAllister and Diane Nelson (Durham and London: Duke Universite Press, 2013).

[136] Note that the report was meant to indict the previous government, but exposed telling structural problems in Guatemala's food system. For a clear graphic representing percentage shortages see National Economic Planning Council of the Guatemalan Government, "Guatemala: Economic NewsLetter," Vol. 2 September 1957, 4. Rg 59 Entry # 5730 Box 4 Folder: "1957 – Guatemala ICA – Klein and Saks" NARA.

[137] Corine Pernet, "Between Entanglements and Dependencies: Food, Nutrition, and National Development at the Central American Institute of Nutrition (INCAP)," *International Organizations and Development, 1945-1990*, eds.,Sönke Kunkel, Corinna Unger und Marc Frey, eds., (Palgrave Macmillan, 2014), 111.

[138] "Jose Valentín Coroy Recibo Beneficios de la Incaparina," *Prensa Libre*, August 25, 1959.

scientist believed was too expensive for poor families.[139] Nutrition and development experts regarded INCAP's use of cotton flour in Incaparina an impressive technical achievement that used a by-product of industrial agriculture to feed the poor.[140] This invention not only helped to mask structural inequalities, it actually deepened them by further enriching cotton growers who profited from hunger.

The growth of cotton production during the 1950s created an abundance of cotton seed and plantation owners searched for revenues that could be extracted from the seed. Hand-picked cotton yielded a high price on international markets, but the market for cotton seed was initially much smaller. The oily, high-protein seed was refined into a cattle feed and pressed to extract oil. Both of these products were sold domestically by cotton producers, yielding further profit that helped planters subsidize cotton plantations. Incaparina created a new market for cotton seed flour, which was refined, packaged and sold to families as an affordable and innovative solution to chronic malnutrition and infant mortality in Guatemala. The newspaper *Impacto* argued that Guatemala should capitalize on global demand for this "soluble marvel" by building factories that could export Incaparina throughout the developing world. Though some Guatemalans sought a silver-lining in the story of Incaparina, this nutritional supplement only existed because the state had abandoned the country to the private sector. The "nutritional miracle of the era" was a timely palliative for the illnesses caused by inequality.[141]

Conclusion

After the coup, landowners used new crops and techniques introduced by the Revolutionary government to rapidly develop land cleared by industrious campesinos. The wild success of agro-exporters after the coup—especially cotton growers—would not have been possible without the agrarian reform and its violent reversal. As it purged activists, the Castillo Armas administration implemented a more controlled and limited agrarian reform that was designed to appease rural demand for land reform. They criticized the Arbenz administration for its chaotic implementation of Decree 900, but Decree 31 and 559 shared the same language as the 1952 law. The difference lay almost entirely in the implementation. While the Arbenz

[139] There was debate among the funding agencies about the storability of hulled sesame and the deficiency in lysine, which cotton flour provided. F. Ronchi-Proja to Dr. A.O. Van Veen, "INCAP Report on Vegetable Mixture 8," April 16, 1957. RG 12ESN544. FAO Archive. Rome; "Incapariana, Nuevo Producto Alimenticio de Gran Provecho en la Dieta Familiar," *La Hora*, August 24 1959.
[140] "Jose Valentín Coroy Recibo Beneficios de la Incaparina," *Prensa Libre*, August 25, 1959.
[141] "Un Producto Nacional Que Puede Ser Motivo de Una Gran Industria," *Impacto*, May 28, 1959.

administration encouraged workers and campesinos to organize themselves into Local Agrarian Committees and pressure for expropriation, the Castillo Armas administration mandated that expropriation would be handled by the state. A small number of campesinos successfully used Decree 31 to retain land they had received through the Agrarian Reform Law. However, the parcels awarded by the DGAA were almost always below the minimum size for a financially viable family farm. By giving petitioners small lots, they virtually ensured that beneficiaries would need to supplement household production with labour on coastal plantations.

Visible development projects like Nueva Concepción were utilized to reassure the public that land reform—controlled and deliberate—was being undertaken. Yet very few campesinos were able to partake in the bounty promised by these Agrarian Development Zones because there was too little land available. The state lacked the capital and the will to expand the program after it exhausted government land. As a result, these agrarian colonies remained largely symbolic: Nueva Concepción offered a glimpse of a more equitable agrarian landscape whose potential was contained by the exploitative industrial farms that surrounded it. Although there were a limited number of Agrarian Development Zones, they became important corn producers that enabled their neighbours to pour resources into cotton and sugar. Throughout the 1960s and 70s the state depended on the largest development zones like Nueva Concepcion to help attenuate Guatemala's growing production problems.[142] Each farm produced large amounts of cereals, but alone they could not compensate for grain shortages that were caused by overpopulation and the continued impoverishment of Guatemalan campesinos.

The displacement of the campesinos and workers after 1954 enabled landowners to reassert control over the countryside, repealing political and material gains that campesinos gained during the Revolution. Communist purges dismantled organized labour and forced Decree 900 beneficiaries to flee their land, allowing landowners to exerted unprecedented power over labour. As during the Ubico period, the government facilitated the growth of private capital by expanding a large networks of roads and ports that allowed landowners to extract goods from Guatemala's coastal frontier. Unlike the 1930s, plantation owners could now depend on state not just to limit popular dissent but also utilize productive technologies like food aid and nutritional

[142] There were 17 agrarian development zones established with assistance from the US. Nueva Concepción and La Máquina were the largest, roughly 85,000 acres each and the rest were between 1,500 and 31,000 acres. Streeter, *Managing the Counterrevolution*, 151.

supplements to dull the edge of hunger. Cotton planters especially combined agrarian modernization with cheap labour to produce large profit margins, allowing them to remain competitive even while investing heavily in pesticides to control pests. By remaking the Pacific Coast into a space dominated by industrial scale plantations, Guatemala's largest landowners also transformed the rest of the country. The seasonal demand for labour drove massive migration to the coast, where labourers were exposed to pesticides, worked long hours and received low wages. Illness or death would often turn meagre earnings into debt and force families to return to the plantation the next year. These cycles of debt and credit became the "anchor of sweat and blood" that shackled campesinos to the earth and liberated landowners to extract Guatemala's riches for export.

Conclusion: "A Cosmic Protest"

In the 1960s, Guatemalan poet Otto René Castillo penned a moving indictment of the country's lucrative cotton industry. His poem, *Obreros de Algodón*, recounted the toil of hundreds of thousands of workers who began harvesting cotton before dawn and continued long after dusk. "They say that cotton workers," wrote Castillo, "have so many suns accumulated in their face[s] that with these they could light a thousand planets." [1] For Castillo, the inhumanity of the cotton industry was embodied by the cotton worker Macario Santiago. The humble Macario looked at Castillo with eyes that radiated a "cosmic protest against hunger" and inequality. Why, asked Macario, do I work so hard and get paid so little? In the final lines of the poem, Macario and his fellow cotton workers awoke and began to grasp the extent of their exploitation. Castillo hoped that their awakening would "impregnate the dawn" and inspire a rural uprising against Guatemala's large landowners. Unfortunately Castillo's vision of change was too hopeful. He tragically underestimated the Guatemalan state's determination to protect the economic interests of large landowners. Castillo was not just a poet, he was also a committed revolutionary who eventually became a member of the clandestine insurgency group the Rebel Armed Forces (FAR). In 1967, Castillo and his female partner, Nora Paíz, were captured by Guatemalan security forces, tortured for 4 days and burned alive in the military barracks of Zacapa.[2]

Born in 1936, Otto René Castillo came of age during the Guatemalan Revolution. He was just eight years old when a coalition of students and workers overthrew the dictator Jorge Ubico. These progressives envisioned a new, more modern Guatemala free of its dependency on coffee production. Since the rise of coffee in the 1870s, wealthy landowners had dictated Guatemala's economic policy. Legal reforms and violence enabled large landowners to displace indigenous communities from ancestral land and claim control of Guatemala's most fertile land. Guatemala's indigenous population was increasingly concentrated in the highlands, where the topography was rugged and there was far less arable land. As the population increased, indigenous farmers had to supplement their small subsistence plots with work on coastal plantations. Prior to 1944, the Guatemalan state ensured that export agriculture prospered at the expense of the health and well-being of Guatemala's indigenous population. The nation's

[1] Otto René Castillo, "Obreros de Algodón," *Informe de Una Injusticia: Antología Poética*, (San Jose: Editorial Universitaria CentroAmericana, 1982), 229-239.
[2] Roque Dalton, "Otto René Castillo: Su Emplejo y Nuestra Responsibilidad," *Informe de Una Injusticia*, 12.

dependency on coffee kept the indigenous population in poverty and stifled the growth of the middle class.

Throughout the Revolution, progressives fought to create a state that protected the rights of workers and campesinos by modernizing the economy, reforming government services and diversifying agricultural production. Politicians, intellectuals and activists attacked the inefficiency and inequality of Guatemalan agriculture, which they frequently compared to feudalism. This short-hand signified the antiquated labour relations and production methods that prevailed on these plantations and progressives encouraged large plantations to modernize so that they could improve yields and offer workers better wages with their newfound profits.[3] The government's eagerness to create rural change also reflected widespread apprehension about environmental and social costs of deforestation, which was attributed to traditional peasant agriculture. Experts who inherited centuries of ethnic discourse about the inefficiency of indigenous agriculture and the innate conservatism of campesinos often overlooked the benefits of existing agricultural systems like milpa that coaxed good yields out of land the state deemed marginal by interplanting and careful fertilization.

Experts initially believed that modernization alone would solve food production problems and end deforestation. The Ministry of Agriculture aggressively promoted new crops to farmers large and small, especially hybridized corn and cotton. These crops and new production technologies were supposed to liberate Guatemala from perennial food shortages and encourage the growth of a middle class of farmers and workers. Fieldwork helped government officials realize that campesinos were often interested in new crops and technologies, but they lacked the land or capital to improve their farms. The Arévalo government created INFOP to spur rural development, giving the organization broad financial powers and technical responsibilities. INFOP effectively pushed hybridized seeds into circulation after moments of crisis like the 1949 rainstorms. They also stimulated the growth of the cotton industry with generous loans and experimented with new hybrids and forms of land tenure like usufruct that emphasized the human role as a steward of natural resources. These crops, credits and new production technologies were supposed to liberate Guatemala from perennial food shortages and encourage the growth of a middle class of farmers and workers. However, modernizers underestimated the

[3] "'Declaración Conjunta del Partido Comunista y del Partido Revolucionario Obrero de Guatemala, Acerca del Salario Minimo de Ochenta Centavos,'" *Octubre*, September 6, 1951.

long-term social, financial, and environmental consequences of modern agriculture, which fostered a dependency on chemicals and discredited local knowledge.

Though progressives were sometimes misguided, the increased visibility and activity of the state in the countryside during the Revolution changed popular expectations about the role of government. Activists believed that the state had a moral responsibility to translate new political freedoms into material improvements in the lives of citizens. This aspiration was realized through the 1952 Agrarian Reform Law that redistributed land to 100,000 families and supported beneficiaries with technical and financial assistance. Guatemalan campesinos were active participants in agrarian modernization throughout the Revolution, but they were especially persistent in their efforts to acquire new seeds, fertilizers and more during the agrarian reform. Working together technicians, bureaucrats and campesinos briefly reversed Guatemala's chronic food production deficit and began to diversify agricultural production.

This new social and political landscape terrified Guatemalan elites, who saw Decree 900 as an attack on their property and a threat to their political power. In 1954, a U.S. backed coup ousted President Jacobo Arbenz and opened the door to decades of military rule. When Guatemalan conservatives retook power, they persecuted supporters of the Revolution. Otto René Castillo and many other progressives fled into exile and watched as the Guatemalan government dismantled the Revolution piecemeal, reversing land reform and persecuting organized labour.[4] The coup of 1954 has often been identified as the moment when aspirations for social justice ended and decades of dictatorship, repression and civil war began. By focusing on 1954 as a moment of traumatic disjuncture scholars lose sight of the long-tail of the Revolution: its social, economic and environmental policies shaped Guatemalan politics and agriculture for generations.

After 1954, Guatemalans, rich and poor, expected their leaders to profess a commitment to modernization as a tool for economic and social change. Though the land reform was immediately reversed by Castillo Armas after the coup—with devastating consequences for campesinos, food production, and the environment—the new President continued to speak about

[4] He was exiled in 1954 because he protested the U.S. backed coup that toppled the government of Jacobo Arbenz. Castillo lived in El Salvador for a time and then travelled to Leipzig, East Germany where he made short films about the conflicts in Latin America. He returned to Guatemala in 1964 as the director of Guatemala City's experimental theatre but was exiled again because of his radicalism. Roque Dalton, "Otto René Castillo: Su Emplejo y Nuestra Responsibilidad," *Informe de Una Injusticia*, 9-29.

reform and modernization. He publicly advocated for a more controlled resettlement project, symbolized by the government sponsored Rural Development Zones that were established across the Pacific Coast. These projects were justified with language borrowed directly from the Revolution, including claims that modernization would eradicate hunger and poverty. In practice, Castillo Armas utilized the new development zones to establish a new political base for his party and these initiatives did little to mitigate the extreme inequality of land tenure in Guatemala. President Castillo Armas freely borrowed the language of agrarian modernization and promoted the technological aspects of agrarian modernization: mechanization, fertilizers, pesticides and hybridized seeds. Yet his government largely rejected the systematic changes to land tenure that Arbenz viewed as essential for meaningful social change and modernization.

The broad appeal of modernization and reform outlasted Castillo Armas, who was assassinated in 1957. After a bitterly contested election, the 'old general' Miguel Ydígoras Fuentes finally secured the Presidency in 1958. His Presidency was characterized by widespread corruption and a failure to embrace modernization, which culminated in a revolt of a third of the Guatemalan military in November 13, 1960. Though the revolt was suppressed, some soldiers fled to mountains of Sierra de las Minas in the East. They organized themselves as the November 13 Rebel Movement, subsequently known as the FAR (Fuerzas Armadas Rebeldes). Their manifesto articulated their frustration with the "lies and theft of Ydígoras Fuentes" and his advisors whom they accused of "simulating a prosperity and economic bonanza that doesn't exist." They criticized the "ruinous" state of rural hospitals and schools, and indicted the administration for tolerating the hunger in the countryside. "One only has to go," they concluded, "15 kilometers outside the capital to see that the dogs of the wealthy eat better than our campesinos."[5] According to the rebels, widespread unemployment and poverty was the product of economic mismanagement that protected large, unproductive plantations at the expense of the poor. "It makes us sad, Guatemalans," wrote the rebels, "to see a dreary future for our country, where one has to import even corn to make tortillas."[6]

The 1960 revolt marked the beginning of a thirty-year civil war in Guatemala. The military and Guatemalan elites used murder, kidnappings and torture as tools of governance.

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[5] Greg Grandin, trans., "We are Officers of the Guatemalan Army: November 13 Rebel Movement," *The Guatemalan Reader: History, Culture, Politics*, eds. Greg Grandin, Deborah Levenson, Elizabeth Oglesby, (Durham: Duke University Press, 2011), 249.
[6] Ibid., 250.

They were haunted by the Revolution, which demonstrated that social change was not only possible it was also productive. After the revolt, the space for public dissent shrank as intellectuals, labour activists and campesinos were killed by the state or fled into exile. Many Guatemalans hoped that the 1966 election of Julio César Méndez Montenegro represented a return to some of the political and economic liberties that existed during the Revolution. Méndez Montenegro was the first civilian to hold office since Arévalo and he promised to institute democratic reforms and control the power of the armed forces. He failed to do either and his government was a captive of the military. They used the cover of a progressive President to deepen the war on the left, brutally suppressing guerillas and activists like Otto René Castillo who fought for a more equitable future.[7]

In this politically volatile moment, the *2nd National Forum on Cotton's Problems* gathered industry advocates and critics to discuss the uncertain future of the cotton industry. Buoyed by several years of successful expansion, cotton growers recklessly expanded the amount of land under cultivation in 1966. The Consejo Nacional de Algodón warned the government that cotton growers needed at least 25% more labourers to collect their anticipated crops.[8] Cotton growers were unable to get the labourers they needed and the 1966 harvest fell far short of their lofty projections. The industry blamed labour shortages on the government's failure to move the elections to accommodate the harvest. They continued their public condemnation of the new government throughout the summer of 1966, until they finally engaged with critics at the forum.

The bureaucrats, agronomists and student leaders who criticized the cotton industry spoke in a language of conservation and modernization that was directly linked to development initiatives undertaken during the Revolution. Hector Sierra, the Director General for Agriculture during the Arévalo administration, criticized the cotton industry for prioritizing immediate profits over sustainable production. Sierra cited the "anti-technical" actions of cotton growers who tried to lower costs by mixing insecticides and solvents with "disastrous results." These noxious chemical cocktails were applied by untrained workers who routinely fell violently ill or

[7] Comisión para el Esclarecimiento Histórico, *Guatemala: Memoria del Silencio*, vol. 1 (Guatemala, 1999), 134-135; Handy, *Gift of the Devil*, 232-233.
[8] The Consejo Nacional de Algodón reported that cotton farmers had planted a record 151, 813 manzanas in 1965-66, over 21, 000 manzanas more than in 1963-64. "Problema se Agrava Cada Día Admite el Consejo: Extensión Sembrada en Cifra Récord; Planteamientos se Harán ante Trabajo," *El Imparcial*, February 15, 1966.

died. Sierra called for a more technical oversight of cotton production to increase yields and limit worker exposure to deadly pesticides.[9] Since labour regulations and inspections instituted by IGSS had little effect on pesticide usage, agronomists urged the state to mandate harsher regulations.[10]

According to these critics, proper development depended on technicians who could strike the right balance between the well-being of humans and the environment. Cotton planters violated this balance by eschewing technical assistance and regulation by the state that reduced yields in the short-term to ensure long-term productivity. Engineer Mario Penagos pointed out that cotton growers exploited the national economy, demanding credits for fertilizers and pesticides to sustain productivity. They promised mutual wealth but the harvest, argued Penagos, resulted in the "almost complete destruction" of Guatemala's precious soils. *El Imparcial* summarized his criticism as a "fantastic vision" of an industry that "produces destruction and death" across the 134,000 manzanas where cotton is cultivated. Penagos' critique reiterated the concern about soil fertility and conservation that had been used to justify state intervention into the countryside since the 1940s. However, in this case the criticism was focused directly on large landowners instead of campesinos.[11]

Cotton grower Roberto Castañeda Felice confidently pushed aside criticism from progressives and technocrats.[12] He argued that cotton was a key export for Guatemala and its cultivation drove the economy and national development. He promoted the high wages received

[9] Agronomists from the University of San Carlos reiterated this demand. They estimated that nearly Q7,000,000 yearly was spent on imported pesticides, but most of this was wasted through over-frequent and inefficient application. This double loss negated some of the foreign exchange benefits cotton growers publicized in defense of the industry. The article ended with a call for the government to mandante cotton growers adopt low volume application methods.

[10] Responding to increased pesticide poisonings in 1965, IGSS drafted a law regulating pesticide use which it planned to submit to congress. The National Cotton Council expressed support for regulations publicly. Yet it seems clear that Congress and producers were more focused on controlling the cost of pesticides because this negatively affected the profitability of Guatemalan cotton. "IGSS Elabora Reglamento Para los Plaguicidas: Congreso Consideró el Problema Algodonero," *El Imparcial*, CIRMA Archive- El Imparcial, Ec. 'C' Algodón, S/19384 (7), 4-4, 1964, 1965, 1966; Julio Santos, "Del Segundo Foro Sobre Problemas Nacionales del Algodon," *El Imparcial*, August 10, 1966.

[11] Julio Santos, "Del Segundo Foro Sobre Problemas Nacionales del Algodon," *El Imparcial*, August 10, 1966.

[12] He also held the post of Press Secretary during the Castillo Armas government, indicating the close association between private capital and the state after the Revolution. "Roberto Castañeda Felice: Armas [Death]," Guatemalan Press Minister Roberto Castaneda Felice holding a letter from Russia to the soldiers who shot President Carlos Castillos Armas. (Photo by Stan Wayman/The LIFE Picture Collection/Getty Images, 1957).

by cotton workers, higher than those paid to sugar or coffee workers.[13] Castañeda did not elaborate that high wages were needed to attract reticent campesinos to the Pacific Coast where migrants laboured in debilitating heat and lived in substandard housing. They frequently fell ill and contracted debts trying to treat malaria, dysentery and the side-effects of pesticide poisonings. *El Imparcial* reported that Castañeda was interrupted by Julio Seguara, a leader in the University Students Association. Seguara called for an investigation of the "subhuman" labour conditions cotton plantations and the "exploitation of man by man" that accompanied the annual migration of 150, 000 labourers from the highlands to work on coastal plantations. He was adamant that the environmental and human costs of cotton cultivation were too high to justify cultivation.[14]

Castañeda dismissed Seguara's interruptions as naive enthusiasm. He assured the forum that the problem was not modern plantation owners, but rather superstitious campesinos. They allegedly reneged on contracts—collecting advances and then moving to other plantations with better wages—and refused rations and housing because it violated indigenous customs. Castañeda was unable to recognize these small acts of disobedience as campesino resistance to a system that exploited their labour under the guise of modernization. "We try," said Castañeda, "to give them Incaparina to add to their diet of beans, tortillas, and chile but they resist taking it. Damn if it's not serious work cultivating cotton!" His offer of Incaparina to campesinos captured the devastating effect of cotton on Guatemala's food system and highlighted the social consequences of agrarian modernization that focused narrowly on productivity without engaging in social and economic reforms.

Though historians have recognized the important political and social changes that occurred during the Revolutionary-era, the emphasis on periodization has prevented scholars from fully acknowledging the social and environmental legacy of this formative period in Guatemalan history. The discourse of modernization, hunger and social change that animated the Revolution persisted well-past the 1954 coup. It became the language of contention that radicals and progressives and used to engage with the state and large landowners. As William Roseberry

[13] Lester Schmid, "The Role of Migratory Labor in the Economic Development of Guatemala," *Land Tenure Center* No. 22 (1967), 38.
[14] Seguara claimed that the quality and quantity of corn produced on the coast also suffered as cotton expanded: cobs now bore traces of pesticides used to control cotton pests. Julio Santos, "Del Segundo Foro Sobre Problemas Nacionales del Algodon," August 10, 1966, *El Imparcial*.

notes, hegemony is "not a shared ideology but a common material and meaningful framework for living through, talking about, and acting upon social orders characterized by domination."[15] This was a narrow political space where experts could criticize and debate the merits of state policy if they framed their concerns in the language of productivity. This emphasis on expertise almost entirely excluded campesinos from public debates: campesinos were spoken about and spoken for at the forum but they did not represent their own interests. Unlike the Revolution that created political forums for campesinos to participate in agrarian modernization policies, after the coup there was very little space for campesinos to engage with the state. Campesinos who tried to defend their rights were demonized as communists and criminals. The military regimes that ruled Guatemala for decades after 1954 idealized compliant labourers and workers who received change imposed from above as "authentic human beings."[16]

[15] William Roseberry, "Hegemony and the Language of Contention," in *Everyday Forms of State Formation: Revolution and the Negotiation of Rule in Modern Mexico*, eds. Gilbert M. Joseph and Daniel Nugent, (Durham: Duke University Press, 1994), 361.

[16] J. FOC. "Los Nuevos Campesinos Propietarios de Tierra," *Tierra*, 1, No. 3 (July 1959): 20.

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